University of Wisconsin Whitewater

College *of* Business and Economics

Fiscal and Economic Research Center

JEFFERSON COUNTY HOUSING REPORT- AN ANALYSIS OF JEFFERSON COUNTY AND ITS MUNICIPALITIES

by

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Executive Summary

The Fiscal and Economic Research Center of the University of Wisconsin, Whitewater, has reviewed data regarding both single family and multi-family which develops a picture of Jefferson County, Wisconsin's housing market. This report covers three main areas of analysis.

Part 1: Jefferson County single-family housing supply, affordability, and demand
Part 2: Jefferson County Multi-Family Housing analysis
Part 3: Housing analysis of the Municipalities Within Jefferson County

Summary of Major Findings & Conclusions

The results for the entire Jefferson housing market show signs of a shortage. Policy changes that address this disequilibrium may improve the health of the housing market and prevent the current housing shortage from compounding. Of particular note, our results do suggest a significant shortage of housing that is affordable to income constrained households.

Part 1 Overview: Jefferson County Single-Family Housing

Determining Owner-Occupied Housing Demand & Supply

Part 1 of the report is focused on determining single-family housing demand and supply in the current Jefferson County market. Months' supply of housing, home prices, and other metrics were analyzed to determine the current demand. The months' supply of housing and price of homes overtime both indicate high demand for housing in the county which is not being met by current supply. The findings also suggest the housing shortage is compounded when affordable housing is analyzed in isolation.

Affordable Owner-Occupied Housing Demand & Supply

The affordability of owner-occupied housing in Jefferson County was reviewed by looking at Monthly homeowner housing costs as a percentage of income and Asset Limited, Income Constrained, Employed households (United For ALICE households). The ALICE data revealed a large number of the household population in lower income brackets lacked access to adequate housing. People in the market for affordable homes face few options and command little bargaining power.

Change in Demand for Owner-Occupied Housing

The "Population Projections and the Outlook of Jefferson County's Homeowner Housing Market" analyzes the projected change in demand for owner-occupied housing. Estimates as to how many owner and renter occupied homes will be needed between 2020-2025 and between 2020-2030 are based on Household population projections and other metrics discussed in the report. Using the Wisconsin Department of Administration household growth projections, we find that housing demand is projected to increase by 1,312 owner-occupied units between 2020-2025. For the 10-year time frame from 2020-2030; an estimated additional 2,592 owner-occupied units will be needed.

Major Findings and Conclusions: Jefferson County

Based on the Study's analysis, this report also concludes that

There is evidence of high demand for single-family housing in Jefferson County.
Results suggest that a shortage of single-family housing in Jefferson County is pronounced for more affordable housing.

Comparison of new housing construction, building permits, population growth, and other related projections suggest that the current shortage will continue without intervention.

Part 2 Overview: Jefferson County Multi-Family Housing

The rental-occupied housing section of the report looks at data that is focused on any housing where rent is collected. In 2019, roughly 30% of the households in Jefferson County lived in rented housing. The percentage of people living in rented housing in Jefferson County has remained relatively constant over recent years. The median household income for renting households in 2019 was $40,532, while the median rent in the county was estimated at $857/month or $10,284/year. A household making $40,532 could therefore expect to spend about 25% of its income on housing costs.

Jefferson County's rental-occupied housing affordability differs slightly relative to the rest of the State of Wisconsin, in that it appears to be more affordable. About 41.5% of Jefferson County households spend 30% or more of their income in rent, whereas that number is 44% for the State of Wisconsin. However, the availability (supply) of adequate rental properties for income constrained households is lacking. We see that by far the highest concentration of rental households spending 30% or more on housing costs fall below the rental household median income.

Rental supply and demand over the past several years has been relatively stable. Both the number of renting households and the quantity of newly built rental units have remained low. However, the median rental price in Jefferson County has appreciated 10.6% since 2015 outpricing many of the households living in Jefferson County. The data suggests a need for additional cost-effective rental units targeted to households earning less than the 2019 median rental income of $40,532.

Part 3 Overview: Municipalities Within Jefferson County

In addition to assessing Jefferson County as a whole, data was also collected for the Cities and Villages. Note that several of these communities overlap county boundaries. Measures that were used on a county wide level were also used to determine the health of the housing market in the identified municipalities. Similar housing shortage trends found in the County level analysis are evident across the municipalities. However, for the smaller communities, there were limits on the availability of all data points.

Each of the municipalities has its own unique housing situation, but some housing trends are present across many, if not all, of the analyzed municipalities. The supply of available single-family homes in all of the municipalities has diminished considerably over the last five years.

The municipalities, collectively and individually, have low month's inventories and high home price appreciation. New housing supply has not been able to keep pace with increasing housing demand. Housing construction rates across the municipalities have been low and do not meet projected household population growth.

Applying the ALICE household data provides further insight into the availability of housing for income constrained households. The municipalities have a heterogeneous distribution of ALICE households. For example, the Village of Johnson Creek and the City of Lake Mills have 30% of households that are below the ALICE Threshold, which is comparable to Jefferson County, but in the City of Watertown 46% of households are below the ALICE Threshold. Each municipality should keep in mind is specific ALICE household distribution when addressing housing availability issues.

Part 1: Jefferson County Single Family Housing

A. Current Supply of Single-Family Housing

Part 1 of this report analyzes the current state of the single-family housing market Jefferson County by estimating the months' supply of housing and home values over time.

- **The months' supply of housing** is the ratio of houses for sale to houses sold. "This provides an indication of the size of the for-sale inventory in relation to the number of houses currently being sold. The months' supply indicates how long the current for-sale inventory would last given the current sales rate if no additional new houses were built (St. Louis Federal Reserve Bank). This indicator is determined by dividing the total number of homes for sale by the number of sales per month. According to the National Council of Housing Market Analysts, "a market area's performance in adding and filling additional units is often a better gauge of its ability to accommodate additional units than household growth statistics, especially in an area with a stable or declining population or an aging housing stock that does not satisfy needs or expectations of current residents."
- **Housing prices over time** are analyzed to evaluate demand directly. Increases in housing prices over time in a particular area can suggest an undersupply of housing, in combination with other factors.

B. Months' Supply of Housing: Jefferson County

The Months' Supply of Housing is important for estimating housing demand because it provides insight on the rate at which houses are selling, compared to the unused supply of homes. The Months' Supply of Housing is calculated by taking the number of for-sale homes and dividing it by the number of sales per month over a certain period (in this case 1 year). This metric can also be reframed as the Absorption Rate, which describes the percent of the existing for-sale homes that would be sold in 1 month if homes continued to sell at the same rate (e.g., a 3 months' supply of housing corresponds to a 33.3% absorption rate, as 1 month supply/3 months' supply = 33% sold in a single month).

Months' Supply of Housing: Methodology

The Months' Supply of Housing was calculated using housing sale data from the Wisconsin Department of Revenue historical real estate transfer records. An analysis of Jefferson County's for-sale single-family housing market was completed.

- **Jefferson County, Single-family Homes**: The Jefferson County single-family home data showed 98 homes sold per month, and 1.56 Months' Inventory as of October 2020 (*see table 1*)

Table 1: Jefferson County: October 2020 Months' Inventory of Single-Family Homes						
	Homes Sold Over Last Year	Months	Sold Per Month	Available to be Sold October 2020	Month's Supply of Housing	Absorption Rate
Jefferson	1,178	12	98	153	1.56	64.2%

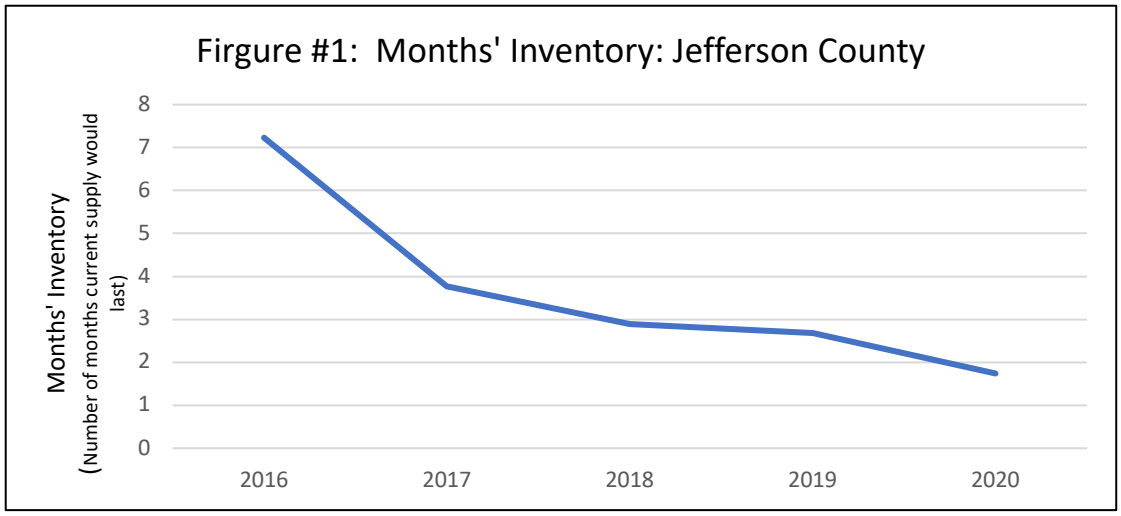
**Source: Realtor.com and Wisconsin Department of Revenue*

Typically, a market that favors sellers has less than 6 months of supply, while more than 6 months of supply indicates an excess of homes for sale that favors buyers (Findwell). As a result, a Months' Supply of Housing lower than 6 months is a "seller's market" where supply is not meeting demand (i.e., a shortage). Jefferson County is below this six-month threshold.

Even when averaged over each year, we see that Jefferson County's month's supply of housing has been decreasing and has been below the 6 month's supply mark since 2017. Jefferson County averaged a 1.74 month's supply of housing in 2020. This indicates there is excess demand for single-family housing in Jefferson County.

Table 2: Jefferson County: Months' Inventory of Single-Family Homes						
	Homes Sold	Months	Average Sold Per Month	Average Available to be Sold	Month's Supply of Housing	Absorption Rate
2016	1,003	12	84	604	7.23	13.8%
2017	1,204	12	100	379	3.77	26.5%
2018	1,211	12	101	291	2.89	34.7%
2019	1,197	12	100	268	2.69	37.2%
2020**	996	10	100	173	1.74	57.5%

**Source: Realtor.com and Wisconsin Department of Revenue*
***Includes townhomes, condos, and other attached single-family housing*



**Source: Realtor.com and Wisconsin Department of Revenue*
***Only includes available 2020 data (from January – October)*

Trend of Jefferson County Home Sales

The number of available homes for sale (the supply) has declined considerably year-over-year the past five years while the average number of homes sold has remained relatively constant at around 100 homes sold per month. The median number of days on market until sold has also slowly trended downward as the number of available-for-sale homes declined. These trends suggest that the available single-family housing supply in Jefferson County is depleting further year-over-year, favoring sellers, and reducing buyers' housing options and bargaining power.

Table 3: Jefferson County: Single-Family Home Sales

	Average Number of Homes for Sale	Average Number of Homes Sold Per Month	Median Days on Market
2016	604	84	84
2017	379	100	86
2018	291	101	86
2019	268	100	79
2020	173	100	77

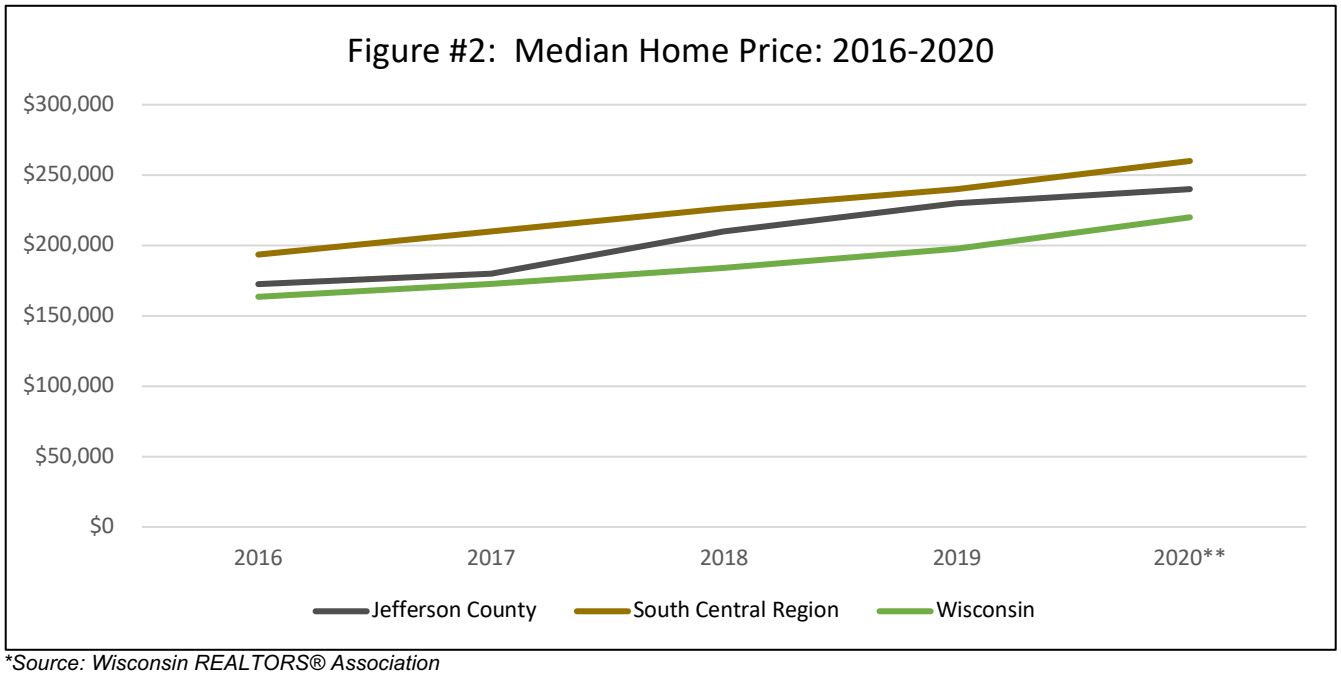
**Source: Realtor.com and Wisconsin Department of Revenue*
***Includes townhomes, condos, and other attached single-family housing*

C. Housing Prices Over Time

A supply shortage may result in increasing home prices. Housing prices across the state (and across the country) have trended upwards since 2013. The data in *Table 4* are estimates provided by the Wisconsin REALTORS® Association. The median price is calculated using summary data of sales prices from multiple listing services measuring existing home and condo sales. As seen in the figures, median home prices for Jefferson County have appreciated faster than both the South-Central Region of Wisconsin and the State of Wisconsin as a whole. The total percent appreciation estimate demonstrates a 39.1% increase in the median home sale price for Jefferson County from 2016 to 2020. Although the median home price in Jefferson exceeds the median home price of Wisconsin over the past five years, it remains below the South-Central Region. This indicates housing in Jefferson is proportionally less expensive than the region around it. However, this may drive demand and prices upward, which can exacerbate the affordability challenge.

Table 4: Jefferson County: Median Home Price									
	Jefferson			South Central Region			Wisconsin		
Year	Median	Yearly Increase	Total % appreciation since 2015	Median	Yearly Increase	Total % appreciation since 2015	Median	Yearly Increase	Total % appreciation since 2015
2016	$172,500	-	-	$193,500	-	-	$163,500	-	-
2017	$180,000	4.3%	4.3%	$210,000	8.5%	8.5%	$172,500	5.5%	5.5%
2018	$210,000	16.7%	21.7%	$226,425	7.8%	17.0%	$184,000	6.7%	12.5%
2019	$229,900	9.5%	33.3%	$240,000	6.0%	24.0%	$197,500	7.3%	20.8%
2020**	$240,000	4.4%	39.1%	$260,000	8.3%	34.4%	$220,000	11.4%	34.6%

**Source: Wisconsin REALTORS® Association*
*** Only includes available 2020 data (from January – October)*



**Source: Wisconsin REALTORS® Association*
*** Only includes available 2020 data (from January – October)*

Jefferson County Median Close Price

The Wisconsin Department of Revenue's home sale database is employed to create the median home sale prices for the last five years (2016-2020). This data captures actual single-family home sales within a given time period. This data finds that the median closed home sales price increased by 8.8% in 2020, and 37.1% over the five-year period. The data was further broken down into quantiles based on home prices. In this instance, the data is divided into three parts, with the second portion representing the average. For example, in 2020 the first quantile estimate is $168,350. As a result, 33% of single-family homes sold in Jefferson during 2020 were closed below $168,350. The first and third quantile estimates have both grown year to year which is consistent with the increasing overall home price median. The first quantile and third quantile estimates have grown at approximately the same pace when averaged over the past five years. Therefore, home price appreciation appears to be consistent across these three

housing sectors. Neither sector seems to exhibit a larger effect on the overall increasing median home price.

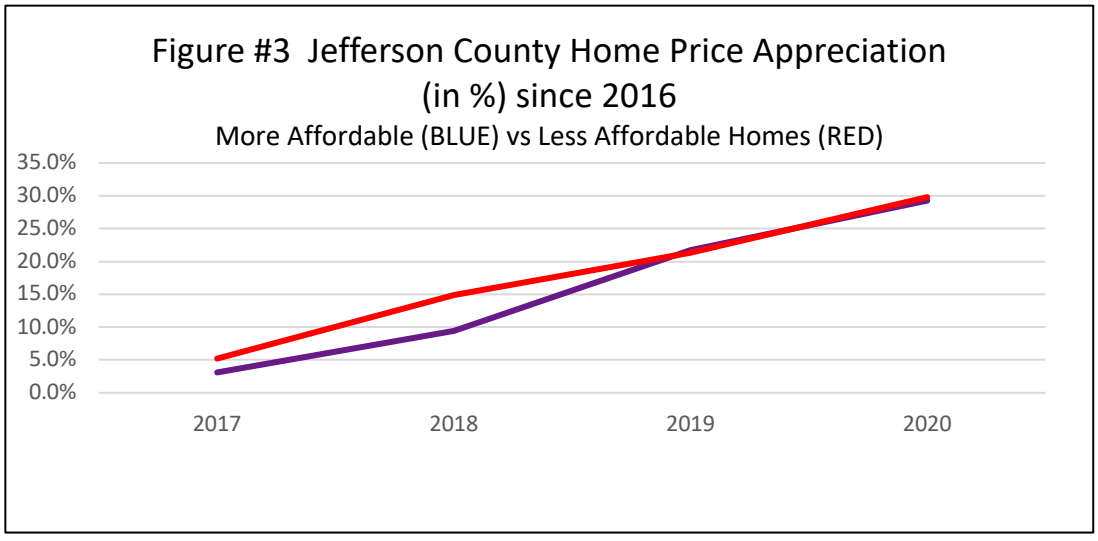
Table 5: Jefferson County Single Family: Median Close Price			
Year	Median Home Price	Yearly Increase	Total % Appreciation Since 2016
2016	$170,000	-	-
2017	$175,500	3.2%	3.2%
2018	$195,000	11.1%	14.7%
2019	$214,200	9.8%	26.0%
2020*	$233,000	8.8%	37.1%

**Data from January-October 2020*
***Source: Wisconsin Department of Revenue*

Close Price by Quantile

Table 6: Jefferson County Single Family: Close Price Quantiles						
	1st Quantile			3rd Quantile		
Year	Estimate	Yearly Increase	Total % Appreciated Since 2016	Estimate	Yearly Increase	Total % Appreciated Since 2016
2016	$129,000	-	-	$235,000	-	-
2017	$133,000	3.1%	3.1%	$247,245	5.2%	5.2%
2018	$141,125	6.1%	9.4%	$270,000	9.2%	14.9%
2019	$157,000	11.2%	21.7%	$285,120	5.6%	21.3%
2020*	$166,750	6.2%	29.3%	$305,000	7.0%	29.8%

**Data from January-October 2020*
***Source: Wisconsin Department of Revenue*



The data was further broken down to exclude condominiums and other attached single-family housing units.

Table 7: Jefferson: Median Close Price Detached Housing			
Year	Median Home Price	Increase from Previous Year	Total % Appreciation Since 2016
2016	$177,000	-	-
2017	$180,000	1.7%	1.7%
2018	$200,000	11.1%	13.0%
2019	$220,000	10.0%	24.3%
2020*	$237,475	7.9%	34.2%

**Data from January-October 2020*
***Source: Wisconsin Department of Revenue*

Jefferson County Median Close Price for Attached Housing

Using the Wisconsin Department of Revenue home sale data, the median home sale price for attached housing over the last five years was determined. The data was filtered to include only homes classified as condos or a unit in a multi-unit structure, such as townhomes. This data captures actual attached single-family home sales within a given time period. Our estimates determined that median closed attached home price increased by 11.7% in 2020 and 39.4% over the five-year period.

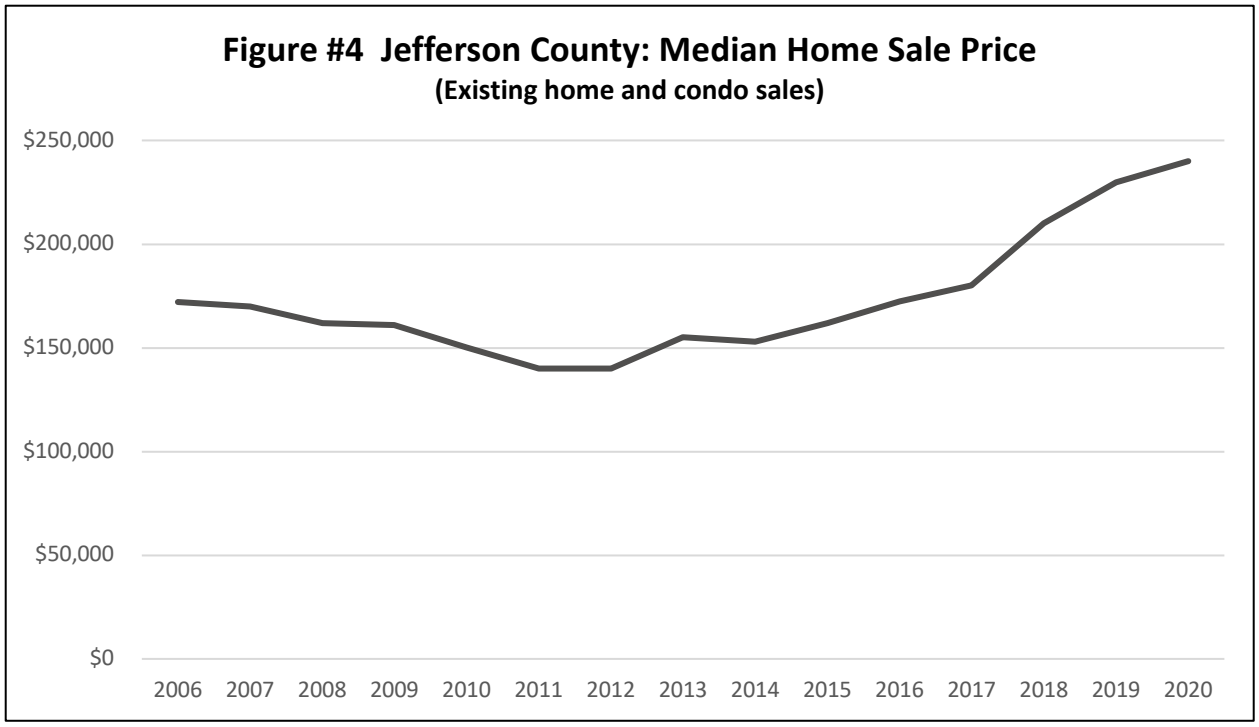
Table 8: Jefferson: Median Close Price Attached Housing			
Year	Median Home Price	Increase from Previous Year	Total % Appreciation Since 2016
2016	$135,000	-	-
2017	$150,000	11.1%	11.1%
2018	$155,000	3.3%	14.8%
2019	$168,500	8.7%	24.8%
2020	$188,250	11.7%	39.4%

**Data from January-October 2020*
***Source: Wisconsin Department of Revenue*

Price appreciation for attached single-family housing is approximately 5.2% higher when compared to detached single-family housing over the past five years suggesting higher demand for attached single-family homes.

2007 to 2020: Trend of All Residential Sales

A comparison between the residential sale price over time shows that in Jefferson County, the current (2020) median residential sale is $68,000 more expensive now than it was in 2006.



**Source: Wisconsin REALTORS® Association*

The median home price and home close price data suggest that Jefferson County single-family housing prices have appreciated faster than statewide increases. While there has been a recent slowdown in appreciation for Jefferson County home prices, relative to Wisconsin, Jefferson County home prices have outpaced the state's home prices over the past five years. Home prices for attached homes have appreciated the fastest compared to detached home price appreciation. In total, the home prices for Jefferson County are suggestive of excess demand (i.e., a shortage of supply) and this demand appears slightly concentrated around attached housing (which may be more affordable but is also a reflection of consumer choice).

D. Single-Family Housing Availability to First Time Homebuyers

One consideration of a housing market is affordability to the new potential homebuyers. According to National Association of Home Builders data from 2017, the average household of a first-time homebuyer has a head of household aged 30-35, with 2-3 people in the household, and a household income of $77,000 per year. For comparison, the median family household income in 2017 for the State of Wisconsin was $75,400, and in Jefferson County it was $72,200.

Table 9: Typical Household Profile of a First-Time Homebuyer	
Median Householder age	30-35 years old
Typical Family size	2-3 people
Median Household Income	$77,000 per year

Source: National Association of Home Builders

To compare housing affordability based on payments that are 30% or greater than household income for first-time homebuyers, imagine a hypothetical three-person homeowner household at various levels of income. As can be seen in the table below, such homeowner households with an income just under the poverty line (which in 2018 is $20,780 for a family of 3) and up to just below the median income of the typical first-time home buyer. As a result, housing is less affordable in Jefferson County than in Wisconsin as a whole.

Table 10: Percent of Homeowner Households within each Income Bracket whose Housing Costs are 30 Percent or More of Household Income		
Household Income Bracket	Jefferson County	Wisconsin
$20,000 to $34,999	52%	50%
$35,000 to $49,999	38%	32%
$50,000 to $74,999	18%	18%

Table 11: Percent of Homeowner Households within each income Bracket whose Housing Costs are 20 Percent or More of Household Income		
Household Income Bracket	Jefferson County	Wisconsin
$20,000 to $34,999	82%	77%
$35,000 to $49,999	64%	58%
$50,000 to $74,999	54%	47%

Source: Calculated using American Community Survey (2015-2019) data.

E. Affordability of Housing: Jefferson vs. Wisconsin

In addition to the prior analysis of home values, the study also analyzed the affordability of housing using American Community Survey data. Specifically, the study analyzed the average monthly housing costs for homeowners across various income brackets, as a percentage of their monthly income. This analysis was completed for both Jefferson County and the state of Wisconsin. In *Tables 12 and 13*, housing affordability for homeowner households in Jefferson County and the State are shown. Both the State of Wisconsin and Jefferson County are facing similar issues of lower income earning housing spending the largest percent of their income on housing costs. The house cost challenge in Jefferson County is slightly higher than the State of Wisconsin overall.

Table 12: Jefferson County: Costs by Income Bracket			
Yearly Income	% Homeowner Households in Income Bracket	Monthly Housing Costs as a Percentage of Average Monthly Income	Percentage of Owner-Occupied Households for Specified Income Bracket
Less than $20,000	5.5%	Housing Costs are Less Than 20 Percent of Income	1%
		Housing Costs are 20 to 29 Percent of Income	6%
		Housing Costs are 30 Percent or More of Income	94%
$20,000 to $34,999	9.7%	Housing Costs are Less Than 20 Percent of Income	18%
		Housing Costs are 20 to 29 Percent of Income	30%
		Housing Costs are 30 Percent or More of Income	52%
$35,000 to $49,999	11.1%	Housing Costs are Less Than 20 Percent of Income	36%
		Housing Costs are 20 to 29 Percent of Income	26%
		Housing Costs are 30 Percent or More of Income	38%
$50,000 to $74,999	19.0%	Housing Costs are Less Than 20 Percent of Income	46%
		Housing Costs are 20 to 29 Percent of Income	36%
		Housing Costs are 30 Percent or More of Income	18%
$75,000 or more	54.1%	Housing Costs are Less Than 20 Percent of Income	75%
		Housing Costs are 20 to 29 Percent of Income	22%
		Housing Costs are 30 Percent or More of Income	3%

**Zero or negative income: <1%*

***Calculated using American Community Survey (2015-2019) data*

Table 13: Wisconsin: Costs by Income Bracket			
Yearly Income	% Homeowner Households in Income Bracket	Monthly Housing Costs as a Percentage of Average Monthly Income	Percentage of Owner-Occupied Households for Specified Income Bracket
Less than $20,000	6.6%	Housing Costs are Less Than 20 Percent of Income	5%
		Housing Costs are 20 to 29 Percent of Income	11%
		Housing Costs are 30 Percent or More of Income	84%
$20,000 to $34,999	10.1%	Housing Costs are Less Than 20 Percent of Income	23%
		Housing Costs are 20 to 29 Percent of Income	28%
		Housing Costs are 30 Percent or More of Income	49%
$35,000 to $49,999	11.5%	Housing Costs are Less Than 20 Percent of Income	42%
		Housing Costs are 20 to 29 Percent of Income	26%
		Housing Costs are 30 Percent or More of Income	32%
$50,000 to $74,999	19.3%	Housing Costs are Less Than 20 Percent of Income	53%
		Housing Costs are 20 to 29 Percent of Income	30%
		Housing Costs are 30 Percent or More of Income	17%
$75,000 or more	52.0%	Housing Costs are Less Than 20 Percent of Income	78%
		Housing Costs are 20 to 29 Percent of Income	18%
		Housing Costs are 30 Percent or More of Income	3%

**Zero or negative income: <1%*

***Calculated using American Community Survey (2015-2019) data*

Jefferson County Homeowner Housing Costs Based on Income

The total number of homeowner households in Jefferson County was broken down based on income level and housing cost. The highest concentration of homeowners spending 30% or more of their average monthly income on housing costs are in the lower income brackets.

Table 14: Jefferson County: Homeowner Household Spending on Housing

Yearly Income	Total Homeowner Households	Number of Households Spending More Than 30% of Average Monthly Income on Housing Costs	Number of Households Spending More Than 20% of Average Monthly Income on Housing Costs
Less than $20,000	1,278	1,200	1,271
$20,000 to $34,999	2,241	1,169	1,840
$35,000 to $49,999	2,575	974	1,649
$50,000 to $74,999	4,391	798	2,361
$75,000 or more	12,509	395	3,139
Total	**22,994**	**4,536**	**10,260**

**Zero or negative income: <1%*
***American Community Survey (2015-2019) data*

Housing Costs that Burden a Household

A brief review of the idea of the "housing burden" is necessary to provide context to the concept. The idea of the "housing-cost burdened" individual (the 30% threshold) stems from the 1937 National Housing Act. This public housing program sought to serve lower income families in need. It called for income limits as opposed to rent limits; in other words, an individual's income could not exceed five to six times the rent.

Following World War 2, this system was inverted into a maximum rent standard in which rent could not exceed 20% of a household's income. Later, in The Housing Act of 1959, the maximum rent percent was maintained but local public housing authorities were given more leeway in establishing what the percent amount would be. Ten years later, in 1969, rent controls, mixed with rising costs associated with maintaining buildings, began taking a toll on those willing to rent and, in so doing, effectively began to undo the public housing program.

To combat this growing issue, the Brooke Amendment of 1969 was added to the 1968 Housing and Urban Development Act, which raised the percent threshold to 25% of a family's income. By 1981, this had been raised to 30%. This became the general rule of thumb and spread across the housing industry. Even federal housing institutions like Fannie Mae and Freddie Mac would

not purchase regular mortgages if the underlying costs were more than 28% of the borrower's income (or 29% if it was an FHA insured loan). The 30% rule of thumb has stuck around since 1981 and has continued to provide a valuable guide when considering analytical reports or policy proposals.

Housing Cost Calculation

The housing costs themselves are typically calculated by tabulating data acquired from the American Community Survey (ACS). For owners, costs are derived by asking questions about their: mortgages, second mortgages or home equity loans, real estate taxes, homeowners insurance, condo fees (if applicable), mobile home costs (if applicable), and utilities (electric, gas, water and sewer, etc.). For renters, the gross rent costs come from a simpler list of questions: the amount of their contract rent and their utilities. Both metrics are divided by the monthly income of that house to determine whether the homeowner or renter is spending 30 percent or more on housing expenses. When this is the case, the owner or renter is determined to be "housing-cost burdened."

F. United For ALICE: Jefferson County Housing Affordability

United For ALICE measures household financial hardship on a state and county level. It seeks to reveal segments of households in a community who struggle to afford basic needs. United For ALICE uses a standardized methodology to assess the cost of living in a community and to identify struggling or ALICE (Asset Limited, Income Constrained, Employed) households.

In the initial Jefferson County analysis, housing affordability for single-family homes in Jefferson County was examined using federal data collected by the US Census American Community Survey. The US Census data estimates household income and housing costs. This offers a picture of which households are bearing the heaviest housing costs as a proportion of income. However, this data is collected on a federal level and, therefore, may not directly capture the distinctive living situation in Jefferson County. United For ALICE data takes into consideration the cost of living in different states, counties, and municipalities providing further insight into the affordability of housing in Jefferson County.

The ALICE Threshold/standard is derived from the Household Survival Budget; a standardized budget used by ALICE to measure the cost of living in a particular community. The Household Survival Budget estimates the minimal cost of the five basic household necessities – housing, childcare, food, transportation, and health care to formulate a monthly budget that covers essentials, taxes, and an additional 10% for miscellaneous needs. Households are designated as ALICE if they fall below the ALICE Threshold, but are above the Federal poverty line. Based on calculations from the American Community Survey and the ALICE Threshold in 2018, Jefferson County had 7,766 households (23%) classified as ALICE and an additional 2,741 households (8%) fall below the Federal Poverty Level.

Households Below the ALICE Threshold in Jefferson County

Households below the ALICE threshold falls short of meeting the minimal annual income required to meet costs of basic identified necessities. The ALICE threshold is adjusted based on household size and composition. The ALICE data suggest that a household with two adults and two school age children making less than $56,976 a year will struggle to find adequate housing they can afford for their family size.

Table 15: Jefferson County: Households Below the Alice Threshold

	Single or Cohabiting		Households with Children		65 and Older	
Total Households in Category	14,718		9,338		9,124	
Number of Households Below ALICE Threshold*	4,080		2,602		3,825	
Example Households	**Single Adult**	**Two Adults**	**Two Adults, Two School-Age Children**	**Two Adults, Two Children in Childcare**	**Single Senior**	**Two Seniors**
Monthly Housing Cost Allocated by ALICE	$527	$618	$822	$822	$527	$618
Monthly Cost of Other Necessities Allocated by ALICE**	$1,267	$2,223	$3,926	$5,217	$1,442	$2,519
Monthly Total	$1,794	$2,841	$4,748	$6,039	$1,969	$3,137
Annual Total (ALICE Threshold)	$21,528	$34,092	$56,976	$72,468	$23,628	$37,644

**Number of households designated as ALICE + the number of households below the Federal Poverty Level*
***Includes: childcare, food, transportation, healthcare, taxes, and an additional 10% for miscellaneous needs*
****Source: United For ALICE 2018, US Census Bureau, Bureau of Labor Statistics*

United For ALICE uses HUD Fair Market Rent to calculate housing costs for different housing types based on household size. The cost is set to the fair market rent price in Jefferson County calculated by HUD. The fair market rent price includes the cost of utilities (electricity, gas, water, sewer, and trash removal) but not telephone or internet service and is set in Jefferson County at the 40th percentile of market rent prices, which is below the median rental price.

United For ALICE assumes housing needs based on household size:

- Single Person – efficiency apartment
- Head of household with a child or a household with two adults – one-bedroom apartment
- Household with three or more people – two-bedroom apartment

Households below the ALICE threshold either must find housing below the fair market rent rate in Jefferson County or are forced to cut back on other necessities. For example, consider a

household with two adults and two school age children making $54,127 annually, which is 95% of the ALICE threshold. If the household's spending on necessities besides housing remains unchanged at $3,926, the household would be left with $585 per month to spend on housing. This household would struggle to afford even a one-bedroom apartment at the fair market price of $618 per month and be unable to afford a two-bedroom apartment at fair market price of $822 unless the household cut back on other necessity spending such as food, childcare, or healthcare.

Affordable Housing Unit Stock

The number of housing units in Jefferson County that are affordable to households below the ALICE threshold can be calculated using home values and rent costs. Using American Community Survey data, the number of homes affordable to single or cohabiting households and family households was estimated.

Mortgage Monthly Cost Approximation

There are some assumptions that need to be made in this calculation. First, we are assuming a 30-year fixed mortgage with a 4% rate. Note that a higher rate exacerbates the challenges to affordability. While property tax rates vary between communities, the model uses a total combined mil rate of $18.90. The model also anticipates a 20% down payment (a lower down payment also increases the challenges to the family). As a result, a family with two children is allocated $822 in the 2018 ALICE survival budget to spend on monthly housing costs. This family can afford a mortgage on a home that is valued at approximately $130,000.

Single or Cohabiting Households

Single and cohabiting households are allocated $527 and $618 respectfully to cover housing costs under the ALICE survival budget in 2018. Households under the ALICE threshold will either be unable to afford these monthly costs or will be required to forgo other necessities to afford housing. Therefore, in order for these households to acquire affordable housing, monthly housing costs for these households must be under $618.

The American Community Survey does not directly estimate the number of homes with housing costs below $618. Although we are not able to calculate the exact number of homes with housing costs below $618, we can come very close by looking at estimates for homes with housing costs below $600. Additionally, the ALICE data is from 2018, and to remain consistent, the American Community Survey housing data is therefore from the 2014-2018 five-year average estimate.

Using American Community Survey data, the approximate number of house units with monthly housing costs under $600 was estimated using the criteria specified above. The number of housing units rented below $600 was added to the number of housing units with mortgage payments under approximately $600 to estimate the total housing stock that is affordable to single and cohabiting households below the ALICE threshold. There are a total of 7,905 single and cohabiting households below the ALICE threshold and 3,477 housing units with monthly housing costs below approximately $600. This suggests there is a shortage of 4,428 adequate housing units for these households.

Table 16: Housing for Households that are Single or Cohabiting Below the Alice Threshold						
Households Under 65 Years Below ALICE Threshold	Households 65 Years and Older Below ALICE Threshold	Total Single and Cohabiting Households Below ALICE Threshold	HUD Fair Market Price for One-Bedroom Apartment	Housing Units with Rent Below $600	Housing Units with Mortgage Payment Under Approximately $600	Total Housing Units with Monthly Housing Cost Under Approximately $600
4,080	3,825	7,905	$618	1,586	1,891	3,477

**Source: United For ALICE 2018, US Census Bureau, Bureau of Labor Statistics, ACS 5-Year Estimate (2014-2018)*

Households with Children

Households with two children are allocated $822 to cover housing costs under the ALICE survival budget in 2018. Households under the ALICE threshold will either be unable to afford these monthly costs or will be required to forgo other necessities to afford housing. Therefore, in order for these households to acquire affordable housing, monthly housing costs for these households must be under $822.

The American Community Survey does not directly estimate the number of homes with housing costs below $822. Although we are not able to calculate the exact number of homes with housing costs below $822, we can come very close by looking at estimates for homes with housing costs below $800. Additionally, the ALICE data is from 2018 and, to remain consistent, the American Community Survey housing data is therefore from the 2014-2018 five-year average estimate.

Using American Community Survey data, the approximate number of house units with monthly housing costs between $600-$800 was estimated using the mortgage calculation criteria specified above. The number of housing units rented between $600-$800 was added to the number of housing units with mortgage payments between approximately $600-$800 to estimate the total housing stock that is affordable to households with children below the ALICE threshold. There are a total of 2,602 households with children below the ALICE threshold and 5,007 housing units with monthly housing costs between approximately $600-$800. This suggests there is a surplus of 2,405 housing units available for households with children.

Table 17: Housing for Households with Children Below the ALICE Threshold				
Households with Children Below the ALICE Threshold	HUD Fair Market Price for Two-Bedroom Apartment	Housing Units with Rent $600 - $800	Housing Units with Mortgage Payments Approximately $600-$800	Total Housing Units with Monthly Housing Cost Approximately $600-$800
2,602	$822	2,342	2,665	5,007

**Source: United For ALICE 2018, US Census Bureau, Bureau of Labor Statistics, ACS 5-Year Estimate (2014-2018)*

Housing Stock Available to Alice Households

Table 18: Affordable Housing Units & ALICE Households				
	HUD Fair Market Price for Adequate Apartment	Households	Housing Units Below HUD Fair Market Price	Housing Unit & Household difference
Single and Cohabiting Households Below ALICE Threshold	$618	7,905	3,477	**(4,428)**
Households with Children Below the ALICE Threshold	$822	2,602	5,007	**2,405**

**Source: United For ALICE 2018, US Census Bureau, Bureau of Labor Statistics, ACS 5 Year Estimate (2014-2018)*

The number of single and cohabiting households below the ALICE Threshold exceeds the number of homes affordable to these households. The data indicates that there are 4,428 households who cannot afford a $618 monthly home payment. The supply of available units is inadequate to serve these households. Presumably, these households are spending more than $600 on housing per month and are forgoing other necessities.

At first glance, it appears that there are adequate housing options for households with children below the ALICE threshold. However, we can assume that single and cohabiting ALICE households unable to find housing below $618 are spending more on housing. If we compare the total number of households below the ALICE threshold to the total number of housing units with monthly housing costs below $800, the shortage of these more affordable homes becomes evident. The data indicates that there are 2,023 households below the ALICE Threshold unable to find housing with monthly housing costs below $800.

Table 19: Affordable Housing Units & ALICE Households		
Households Below the ALICE Threshold	Housing Units with Monthly Costs Below $800	Housing Unit & Household difference
10,507	8,484	**(2,023)**

**Source: United For ALICE 2018, US Census Bureau, Bureau of Labor Statistics, ACS 5 Year Estimate (2014-2018)*

This comparison between affordable housing units and ALICE identified households is included to provide context to the supply and demand for affordable housing in Jefferson County. Households below the ALICE threshold presumably require access to less expensive housing. However, other households (who are above the ALICE threshold) may also be reliant on less expensive housing options. Households whose annual income is just above the ALICE threshold, and not counted as an ALICE household, will still seek more affordable housing options. Households under the ALICE threshold may also receive additional monetary or housing assistance, allowing them to live in more expensive housing units. For example, there are programs in place to assist seniors with finding adequate housing. Although there is some ambiguity surrounding the exact number of households who require affordable housing, demand for the most affordable homes (monthly housing payment under $800) exceeds the current supply of such housing units in Jefferson County.

ALICE Households in Jefferson County

ALICE provides an idea of which types of households are in the most need of affordable housing by comparing annual incomes to annual necessity expenses, which includes housing. Although the ALICE data does not pinpoint the exact households that lack affordable housing options, it does provide an idea of the type and quantity of households in need of affordable housing.

Looking closely at households with children, the largest concentration of households with children below the ALICE threshold are single-parent, or more specifically single female-headed, households.

Table 20: Jefferson County: Households with Children			
	Total Households	Households Below ALICE Threshold*	% of Households Below ALICE Threshold
Married	6,618	748	11.3%
Single Female-Headed	1,785	1,257	70.4%
Single Male-Headed	935	597	63.9%

** Number of households designated as ALICE + the number of households below the Federal Poverty Level*
***Source: United For ALICE 2018, US Census Bureau*

Looking at the working age population (under 25 – 64 years old), 6,682 households in Jefferson County are classified as ALICE. Households in the youngest age group (under 25 years old) and those in the oldest age group (65 years and over) have the highest chance of being classified as ALICE in Jefferson County.

Table 21: Jefferson County: Households by Age			
	Total Households	Households Below ALICE Threshold*	% of Households in Age Bracket Below ALICE Threshold
Under 25 Years Old	1,029	430	41.8%
25-44 Years Old	10,282	3,198	31.1%
45-64 Years Old	12,745	3,054	24.0%
65 and Over	9,124	3,825	41.9%

** Number of households designated as ALICE + the number of households below the Federal Poverty Level*
***Source: United For ALICE 2018, US Census Bureau*

G. Summary: Current Demand for Single-Family Housing

Jefferson County's housing supply and demand was estimated by examining the months' supply of housing and home values over time.

The Months' supply of housing captures how long the current supply of available homes will remain on the market given the current demand. This rate can be used to determine the speed at which available housing will be depleted from the market. The County of Jefferson has a 1.6 months' supply of housing, which is below the six months typical of market equilibrium (Findwell). As of October 2020, Jefferson county has 153 single-family homes for sale. The month's supply of housing analysis is suggestive of a lack of supply for single-family housing in Jefferson County.

Home prices have risen in Jefferson County. Between 2016-2020, home prices in Jefferson County have risen 39% compared to the State of Wisconsin's overall home price growth of 35% over the same time period. The median close price of sold homes in Jefferson County is also rising quickly. Over the past year, the median home sale price has risen 8.8%. Quickly rising home values and a low months' supply of housing both coincide with strong demand.

These findings suggest that there is a shortage of single-family housing in Jefferson County. In particular, the evidence indicates a more prominent shortage of the types of homes that would be considered more affordable. Home sale prices for attached housing are increasing at a faster rate than prices for detached housing. Furthermore, a first-time homebuyer in Jefferson County will find housing to be less affordable as compared to the State of Wisconsin as a whole, indicating that the supply of affordable housing is falling short of meeting demand. The ALICE data further indicates that composition of housing units in Jefferson County is inadequate to provide housing for lower income earners. Estimates are that there are 2,023 households under the ALICE Threshold unable to afford adequate housing without forgoing other living necessities or receiving additional monetary assistance.

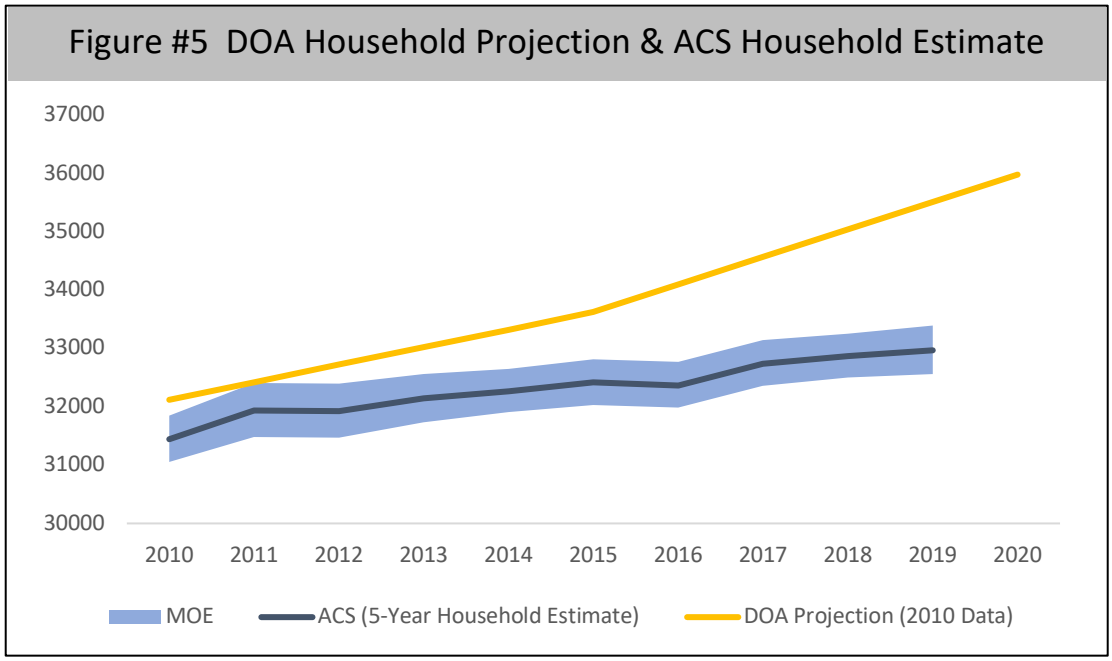
H. Population Projections and the Outlook of Jefferson County's Homeowner Housing Market

As the population and demographics of the county of Jefferson changes, so too will the single-family housing market. The study compiled various household projections and completed an in-depth analysis using the Wisconsin Department of Administration projection scenario. Also, the increase in the population of households for recent years was compared to recent housing unit growth rates. Lastly, results from this section are interpreted to provide insight into the recent and future state of the Jefferson County single-family housing supply and projected demand.

Household Population Projections

In terms of demand, the study analyzed household population projections. The estimated population of Jefferson County as of 2019 was 84,769 (according to US Census estimates). More important for housing demand and housing needs, however, is the total number of households (i.e., the household population). The population projections were developed by the Wisconsin Department of Administration (WISDOA).

Figure 5, Shaded blue area indicates the 90% Margin of Error for the ACS 5-year estimate



**Source ACS, DOA*

DOA Household Projection and ACS Household Estimate Growth

Growth rates for households in Jefferson County over the past ten years have remained below the DOA's household projections. The DOA projected that the number of households in Jefferson County would increase 12% from 2010 to 2020. According to the ACS household estimates, households have only grown 4.8% from 2010 to 2019.

Table 22: DOA Household Projection & ACS Household Estimate				
Year	**ACS 5-Year Household Estimate**	**ACS Estimate Total % Grown Since 2010**	**DOA Household Projection (2010 Data)**	**DOA Projection Total % Grown Since 2010**
2010	31,442	-	32,117	-
2011	31,936	1.6%	-	-
2012	31,925	1.5%	-	-
2013	32,137	2.2%	-	-
2014	32,267	2.6%	-	-
2015	32,413	3.1%	33,621	4.7%
2016	32,366	2.9%	-	-
2017	32,739	4.1%	-	-
2018	32,866	4.5%	-	-
2019	32,965	4.8%	-	-
2020	-	-	35,974	12.0%

**Source: DOA and ACS 5-year estimates*

I. Single-Family Construction and Development

Distribution of Housing Types

Residential housing can be categorized in three groups: Single-family, Multi-family, and Mobile Homes. It should be noted that single-family housing can be owner occupied or renter occupied. The American Community Survey defines single-family homes as including fully detached, semi-detached (semi-attached, side-by-side), and row houses. Detached homes are not connected to another housing unit and have open space on all four sides of the structure. Attached homes are adjoined through at least one common ground to roof wall and include housing such as townhouses, double houses, or houses attached to a nonresidential structure. In *Table 23*, attached single-family housing units are separated from detached single-family housing units.

The American Community Survey classifies single-family structures as units that:

- Are separated by a ground-to-roof wall
- Have a separate heating system
- Have individual meters for public utilities
- Have no units located above or below

If each unit within the building does not meet the conditions above, the building is considered multi-family. Multi-family housing is defined as units in structures containing two or more apartments.

Table #23: Jefferson County: Percentage of Housing by Units		
Type of Housing	**Quantity of Units**	**% of Total Units**
Total Housing Units	35,818	100%
Single-Family Housing		
One-Unit, Detached	24,851	69.4%
One-Unit, Attached	1,533	4.3%
Total Single-Family Housing	26,384	73.7%
Multi-Family Housing		
Two Units	1,801	5.0%
Three - Four Units	1,633	4.6%
Five Or More Units	4,328	12.1%
Total Multi-Family Housing	7,762	21.7%
Mobile Home	1,661	4.6%

**American Community Survey 5-year (2015-2019) estimates*

Owner-Occupied and Renter Housing Distribution

Owner-occupied homes are classified by the American Community Survey as housing units where the owner lives in the unit. The unit may have a mortgage, loan, or other debt arrangement. The unit is also considered owner-occupied if it resides on leased land, but the occupant has a mortgage on the unit. Mobile homes with a loan balance are also included in this category. Renter-occupied units encompass any housing units not considered owner-occupied. Renter-occupied unit counts include continuing care or life care arrangements where a health services provider assists with shelter and other necessities.

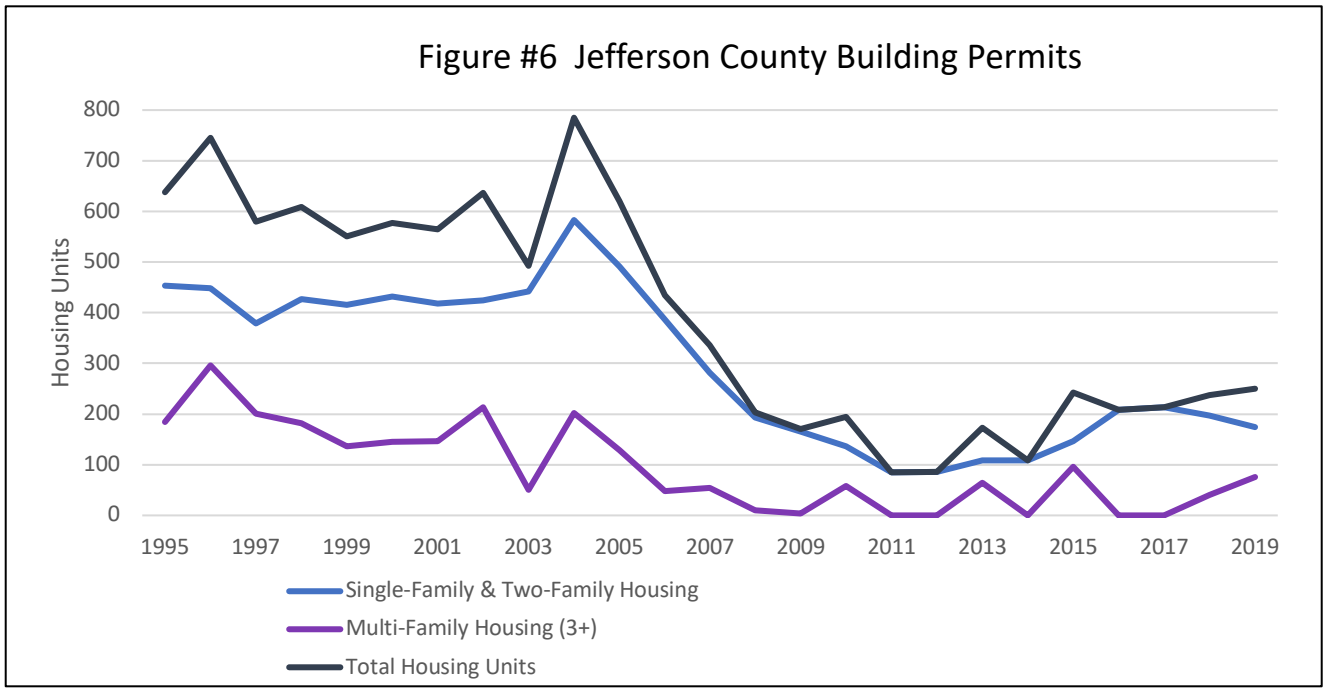
Table #24: Jefferson County: Occupied Housing Units			
	Household Estimate	Margin of Error	% of Occupied Housing
Occupied housing units	32,965	±424	100%
Owner-occupied	23,126	±483	70.2%
Renter-occupied	9,839	±515	29.8%

**American Community Survey 5-year (2015-2019) estimates*

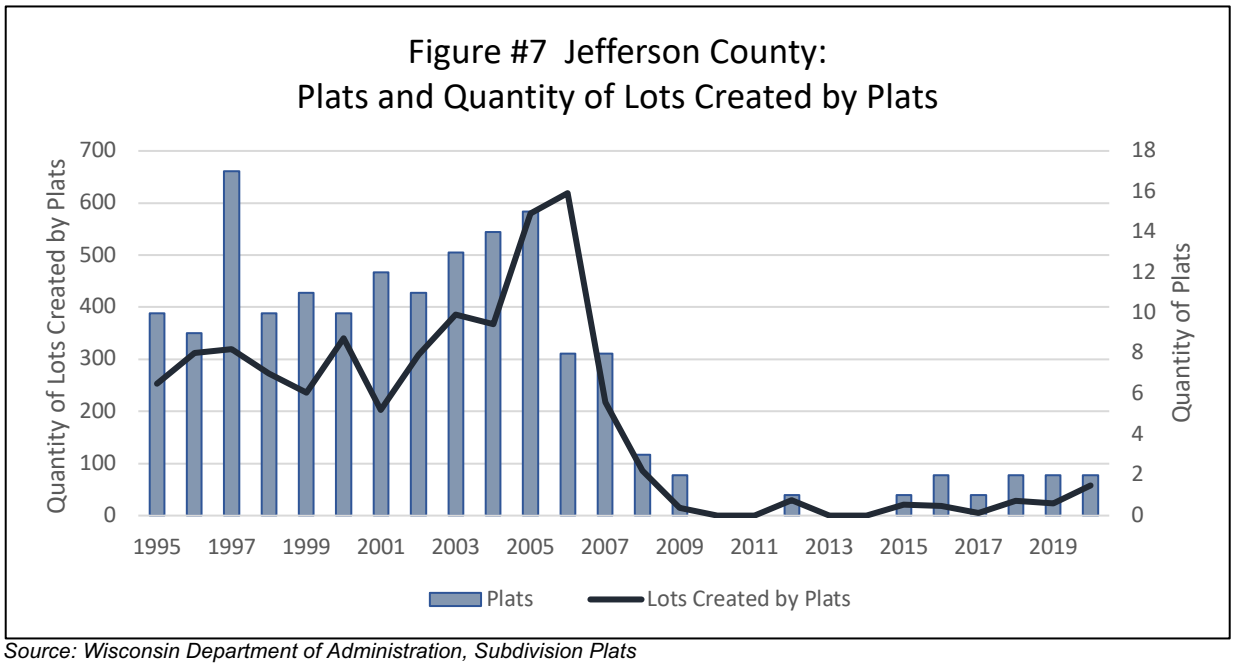
Platted Lots and Building Permits Over Time

While Jefferson County's construction rates declined during the 2007-2009 recession, there has been a slow increase since 2011. Construction rates, however, have not returned to pre-recession levels. As measured by building permits, the number of housing units planned for 2019 construction (250 units) was still only around half the number of housing units planned for construction in either 2003 or 1999 (which had 493 and 551 units, respectively); the lowest rates

of construction prior to 2006. Similar trends are apparent when looking only at permits for single-family and two-family homes. This trend is also reflected in both the number of subdivision plats and the number of lots created by subdivision plats within Jefferson County.



Source: State of the Cities Data Systems (SOCDS) Building Permits Database, Census Bureau Building Permits Survey



Source: Wisconsin Department of Administration, Subdivision Plats

Household Trends Compared to Lots and Building Permits

The average increase in households per year over the past five years has exceeded the number of new lots created by plats. The total number of new building permits issued over the past five years has exceeded household growth. However, building permits can overestimate new housing starts. They also do not reflect housing unit demolition rates. Additionally, from 2000-2014 the average number of new households each year was 194 while the average number of new units authorized by building permits was 129. This period of low housing unit construction probably contributed to the low levels of housing inventory and quickly rising home prices we see today. Over the past five years (2015-2019), the number of building permits issued has increased and appear to be on track to meet demand for new homes. However, if suppressed household growth rates should increase to levels projected by the DOA, the current rate of new construction would be inadequate to meet demand.

Table 25: Jefferson County: Households, Lots, Building Permits

	Average Household Increase Per Year Over Last 5 Years	Number of Lots Created by Plats	Number of Building Permits Issued
2015	138	21	242
2016	138	18	209
2017	138	5	213
2018	138	28	237
2019	138	24	250

**Source: American Community Survey 5-year estimates, Wisconsin Department of Administration, State of the Cities Data Systems (SOCDS) Building Permits Database, Census Bureau Building Permits Survey*

Housing Built Since 2010

Worth noting is actual new housing construction over the past ten years. The American Community Survey collects data on the year a housing unit is built. The data is collected for both occupied and vacant housing units. Year built refers to when the building was first built and does not record remodeling, additions, or building conversions. It should be noted that the data has limitations since questionnaire respondents must rely on their memory or on estimations based on when the housing around them was built. Therefore, year-to-year estimates tend to have a wide margin of error. However, this data serves as an approximation of new construction. The ACS's five-year estimation helps to smooth out some of the variation year-to-year. As seen in *Table 26*, the five-year (2015-2019) estimate indicates 1,017 housing units have been built since 2010 and the one-year (2019) estimate indicates 1,270 housing units have been built.

Table 26: Jefferson County: Housing Construction Since 2010			
	Housing Units Built 2010-2013	Housing Units Built 2014-Later	Total Units Built since 2010
ACS 5-Year Estimate	556	461	1,017
ACS 1-Year Estimate *(High Margin of Error)*	443	827	1,270

**Source: ACS 5-Year Estimate (2015-2019), ACS 1-Year Estimate (2019)*

Comparing Housing Unit Construction and Household Growth

The American Community Survey estimates that from 2010-2019 the number of households in Jefferson County increased by 1,523. This household growth provides an estimation for the increase in housing demand in Jefferson County.

Table 27: Jefferson County: Household Growth Since 2010		
Total Households in 2010	Total Households in 2019	Household Growth Since 2010
31,442	32,965	1,523

**Source: ACS 5-Year Estimates*

By comparing the number of new housing units built since 2010 to the household growth during this period we can see that the supply of new housing has fallen short of meeting the increase in demand for housing in Jefferson County. Both the five-year and one-year ACS new housing unit estimates fall short of meeting the increase of households in Jefferson County since 2010.

Table 28: Jefferson County: Household and Housing Units (5-Year ACS)		
Housing Units Built Since 2010	Household Growth Since 2010	Housing Unit Shortage
1,017	1,523	**(506)**

**Source: ACS 5-Year Estimate (2015-2019), ACS 1-Year Estimate (2019)*

Table 29: Jefferson County: Household and Housing Units (1-Year ACS)		
Housing Units Built Since 2010	Household Growth Since 2010	Housing Unit Shortage
1,270	1,523	**(253)**

**Source: ACS 5-Year Estimate (2015-2019), ACS 1-Year Estimate (2019)*

J. Estimated & Projected Number of Homeowner Households

As presented in *Table 30*, the projections for the total number of households in Jefferson County constructed by the DOA in 2013 (which used 2010 census data) overestimated the actual increase in the number of households over recent years. The projection from DOA for the increase in total number of households has been outside the 90% margin of error of the ACS estimates since 2011. If trends continue, the actual ACS estimates for the total number of households will continue to diverge from these projections. Thus, a comparison between recent housing unit growth and the DOA projection should anticipate further overestimates. Therefore, the study analyzed several possibilities for household growth over the next ten years.

Table 30: Jefferson County: Household Growth & Projection

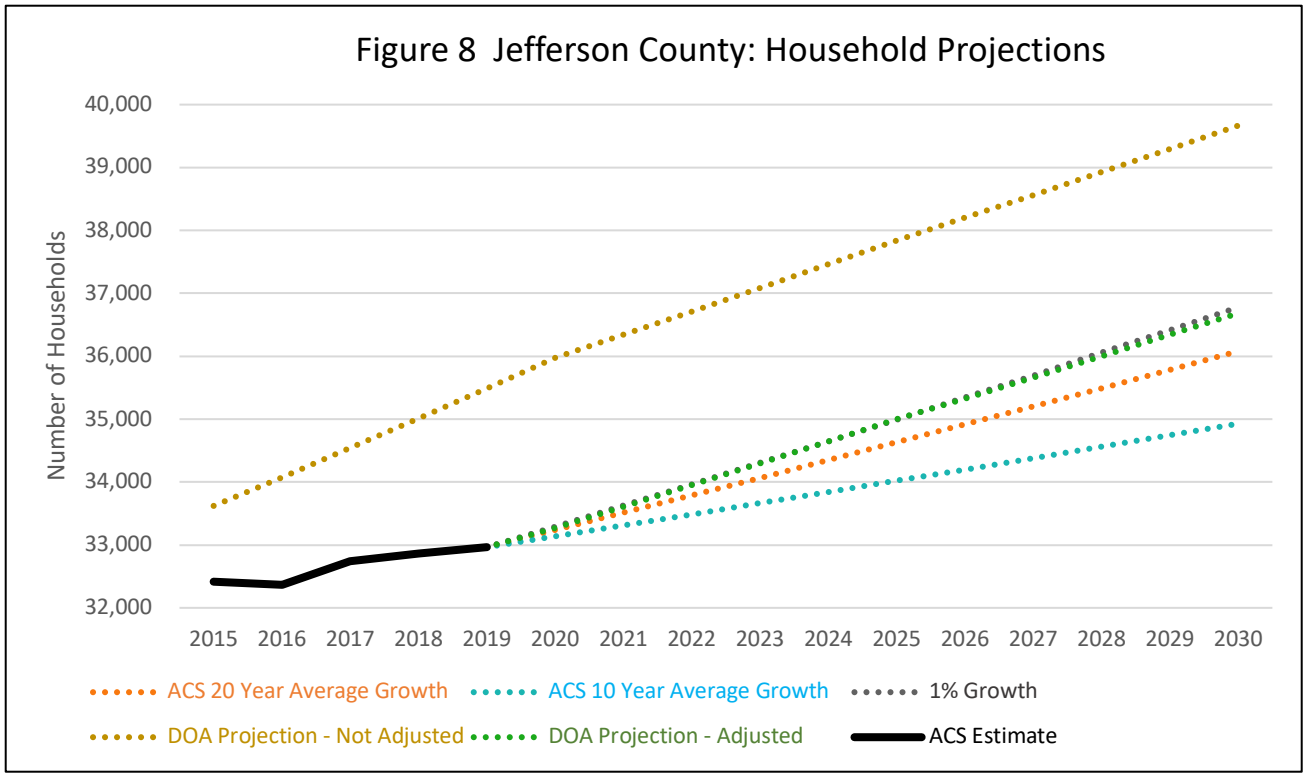
	ACS Household Estimated Growth		DOA Projected Household Growth	
	Average Household Increase Year-Over-Year	Average % Change Year-Over-Year	Average Household Increase Year-Over-Year	Average % Change Year-Over-Year
2010-2015	194	0.61%	301	0.92%
2015-2020	138	0.42%	471	1.36%
2020-2025	-	-	374	1.02%
2025-2030	-	-	365	0.95%

**Source: DOA and ACS 5-year estimates*

Household Growth Rate Projections

The FERC calculated several potential household growth rates using data from the ACS's recorded household estimates and the DOA's household projection. The growth rates were then compounded year-over-year to demonstrate different scenarios for Jefferson County's household growth through 2030.

- ACS 20 Year Average Growth: The average household growth per year over the past twenty years was calculated using ACS household estimates. Over the past twenty years, the quantity of households grew on average 0.82% year-over-year.
- ACS 10 Year Average Growth: The average household growth per year over the past ten years was calculated using ACS household estimates. Over the past ten years, the quantity of households grew on average 0.53% year-over-year.
- 1% Growth: A constant 1% increase in households year-over-year which can be used as a reference.
- DOA Projection – Not Adjusted: The original projection calculated by the DOA in 2013 using 2010 data.
- DOA Projection – Adjusted: The household growth rates from the original DOA projection calculated in 2013 were applied to the current estimate for the number of households in Jefferson County according to the ACS.
- ACS Estimate: Actual household estimate recorded by the American Community Survey.



**Source: DOA and ACS 5-year estimates*
*** Growth Rates are compounded year-over-year*

Future Renter vs Owner-Occupied Unit Composition Demand

The different household projections were used to calculate the average increase of households per year over the next five and ten years. Using the ACS (2015-2019) estimate of a 70.2% owner-occupied household rate, we estimated the increase of homeowner vs. renter households. This estimate assumes that the owner-occupied household rate (70.2%) in Jefferson County will not change significantly in the future. The owner-occupied household rate is the current percentage of all homes in Jefferson County classified as owner-occupied. As mentioned earlier, the ACS classifies any unit where the owner lives in the unit as owner-occupied. Owner-occupied units may have a debt arrangement and include units with a mortgage on leased land. Owner-occupied units therefore may be detached, attached, condos, townhomes, or mobile homes.

Household Projections (2025)

WISDOA Projection: The estimated difference between the number of households in 2025 and 2020 is calculated to be 1,869 households, according to the Wisconsin Department of Administration for Jefferson County. This corresponds to about a 1,312 increase in the number of homeowner households from 2020 to 2025 (the majority of the rest are renter households).

Table 31: 2020-2025 Homeowner & Renter Household Projection				
	Total Household Increase	Average Household Growth Per Year	Projected Increase in the Number of Homeowner Households Per Year	Projected Increase in the Number of Renter Households Per Year
ACS 20 Year Average Growth	1,392	278	195	83
ACS 10 Year Average Growth	882	176	124	53
1% Growth	1,698	340	238	101
DOA Projection - Not Adjusted	1,869	374	262	111
DOA Projection - Adjusted	1,728	346	243	103

**Source: DOA and ACS 5-year estimate*

***Calculated using the American Community Survey (2015-2019) estimate of a 70.2% owner occupied household rate. It therefore assumes an owner-occupied household rate that does not change significantly in the future.*

Household Projections (2030)

WISDOA Projection: The estimated difference between the number of households in 2030 and 2020 is calculated to be 3,692 households, according to the Wisconsin Department of Administration for Jefferson County. This corresponds to about a 2,592-homeowner household population increase from 2020 to 2030 (the majority of the rest are renter households).

Table 32: 2020-2030 Homeowner & Renter Household Projection				
	Total Household Increase	Average Household Growth Per Year	Projected Increase in the Number of Homeowner Households Per Year	Projected Increase in the Number of Renter Households Per Year
ACS 20 Year Average Growth	2,843	284	200	85
ACS 10 Year Average Growth	1,788	179	126	53
1% Growth	3,483	348	245	104
DOA Projection - Not Adjusted	3,692	369	259	110
DOA Projection - Adjusted	3,414	341	240	102

**Source: DOA and ACS 5-year estimate*
***Calculated using the American Community Survey (2015-2019) estimate of a 70.2% owner occupied household rate. It therefore assumes an owner-occupied household rate that does not change significantly in the future.*

Current Construction Rates Compared to Household Projections

Returning to the post 2010 construction rates, the current pace of new housing unit construction will be unable to meet the projected increase in new households. If we assume that new housing unit construction rates will remain relatively constant over the next ten years, the current housing shortage in Jefferson County will be compounded. Looking at the DOA household projection, the current rate of construction will be 2,422 housing units short of meeting future demand.

Table 33: Jefferson County: Housing Construction and Projected Households		
Total Housing Units Built Since 2010*	DOA Projected Household Growth 2020-2030	Projected Housing Shortage if Construction Rates Remain Unchanged
1,270	3,692	**(2,422)**

**The ACS 1-year (2019) estimate is used here even though it has a higher margin of error since it more closely resembles building permit rates.*
***Source: ACS 1-year (2019) estimate, DOA*

Adapting the data to more conservative household growth projection estimates, the current rate of construction is inadequate to meet future housing demand. The ACS 10 Year Average Growth Projection indicates the number of households will increase by 1,788 between 2020-2030, while the number of new housing units built between 2010-2019 is equal to 1,270.

Table 34: Jefferson County: Housing Construction and Projected Households		
Total Housing Units Built Since 2010*	ACS 10 Year Average Growth Projected Household Growth 2020-2030	Projected Housing Shortage if Construction Rates Remain Unchanged
1,270	1,788	**(518)**

**The ACS 1-year (2019) estimate is used here even though it has a higher margin of error since it more closely resembles building permit rates.*
***Source: ACS 1-year (2019) estimate, DOA*

To meet the most conservative estimates of household projections, current construction rates of new housing units will need to increase over the next ten years. Recent building permit records indicate that construction rates have been increasing slightly over the past five years and at least for the moment seem to be keeping pace with recent historically low household growth rates. New plats and lots created by plats remain suppressed and have not recovered since the 2007-2009 recession. If household growth rates begin to increase in the next few years to be closer to the DOA's household projections, this current new housing construction rate will be quickly surpassed. The outlook indicates that home prices will continue to rise and the number of homes available for-sale on the market will continue to decrease. Buyers will have very little bargaining power which will further exacerbate the issues of supplying adequate workforce housing, especially housing for Asset Limited, Income Constrained, Employed (ALICE) Households.

Part 2: Analysis of Rental-Occupied Housing

Part two of the report examines rental-occupied housing consisting of any household that is not owned by the residents.

A. Number of Rental-Occupied Households

Table 35 exhibits the outlook of total rental-occupied households from 2015 to 2019. One of the challenges of the ACS is the sampling methodology which can result in large fluctuations of the data. As seen in *Table 35*, there is a decrease in the number of households from 2017 to 2018. This may be due to changes in the ACS's sampling methodology. The sample numbers create an uncertain picture of the number of rental-occupied households. However, when combined with building permits, this analysis uses a level of renters at around 9,000 households. Referring back to the building permits in Jefferson County (Figures 6 and 7), Jefferson County has witnessed a slow increase in building permits. Breaking it down further, in 2019 we could see only 3 duplex permits and 15 or fewer 5+ multi-unit permits issued for the year. In 2018, we saw 14 duplex permits, and 8 or fewer 5+ multi-unit permits. In general, the supply side of the equation for rental-occupied housing seems rather low, but there does not seem to be too much surge in demand either based on population estimates.

Table 35: Jefferson County: Number of Rental-Occupied Households

Year	Households
2015	9,941
2016	10,804
2017	11,100
2018	8,854
2019	8,795

**Source: ACS 5-year estimates*

B. Median Gross Rent

Median gross rents have trended upwards since 2013. Median rental prices for Jefferson County have appreciated at a similar pace to Wisconsin as a whole (Table 36 – next page). The total percent appreciation estimate demonstrates a 10.6% increase in the median gross rent for Jefferson County from 2015 to 2019.

Table 36: Jefferson County: Median Gross Rent						
		Jefferson			Wisconsin	
Year	Median	Yearly Increase	Total % Rent Appreciation Since 2015	Median	Yearly Increase	Total % Rent Appreciation Since 2015
2015	$775	-	-	$776	-	-
2016	$783	1.0%	1.0%	$789	1.7%	1.7%
2017	$814	4.0%	5.0%	$813	3.0%	4.8%
2018	$854	4.9%	10.2%	$837	3.0%	7.9%
2019	$857	0.4%	10.6%	$856	2.3%	10.3%

**Source: ACS 5-year estimates*

As median gross rent has increased, so too has rental-occupied household median income. The table below shows the changes in rental-occupied median household income year-by-year from 2015 to 2019. By 2019, we can see that median income and rent have stabilized at around a 10% total increase from 2015 to 2019. Once again, the limitations of the ACS data are recognized—however, there appears to have been a rise in household incomes over the five-year period.

Table 37: Jefferson County Rental-Occupied Median Household Income			
Year	Median	Yearly Increase	Total % Increase Since 2015
2015	$37,196	-	-
2016	$33,870	-8.9%	-8.9%
2017	$30,543	-9.8%	-17.9%
2018	$42,984	40.7%	15.6%
2019	$40,532	-5.7%	9.0%

**Source: ACS 5-year estimates*

C. Affordability of Rental-Occupied Housing

As a percentage of household income, rental costs in Jefferson County are slightly more affordable than the State of Wisconsin as a whole. This indicates that there are more affordable options for rental housing in Jefferson compared to the entirety of WI.

According to the U.S. Department of Housing and Urban Development (HUD), housing is considered affordable to a household if housing costs are 30% or less of the household's income. Using this standard, the percentage of renter-occupied housing in Jefferson County that is considered affordable using this standard is 58.5% as compared to 56% for the State of Wisconsin. Households that must spend more than 30% of their income on housing costs, may be using other forms of assistance to meet basic needs. In Jefferson County there are 3,828 renter households spending 30% or more of household income on housing costs.

Table 38: Jefferson County: Rent Payments as a Percentage of Household Income			
	Estimate Number of Renter Households Spending X% of Income on Housing	Jefferson County households in %	State of WI households in %
Occupied Units Paying Rent*	9,225	100%	-
Less than 15.0 percent of Household Income is Spent on Housing Costs	1,549	16.8%	16.3%
15.0 to 19.9 percent	1,634	17.7%	14.8%
20.0 to 24.9 percent	1,149	12.5%	13.5%
25.0 to 29.9 percent	1,065	11.5%	11.4%
30.0 to 34.9 percent	1,001	10.9%	8.5%
35.0 percent or more	2,827	30.6%	35.5%

** Excluding 614 units where ACS could not compute Gross Rent as a Percentage of Household Income*
***Source: ACS 5-year estimate (2015-2019)*

The ACS median household income level for all households living in Jefferson County in 2019 is reported as $71,108, while the median income of households living in renter-occupied homes is $40,532. Using the HUD affordable housing metric, which assumes housing is affordable to its occupants if costs are 30% or less than income, a household earning around the median income of $71,108 can spend up to $1,778 per month on housing without experiencing housing expense stress. Likewise, a household earning the median renter-occupied household income of $40,532 can spend up to $1,013 on rent for their housing costs to be considered affordable. HUD compiles data on household income levels on a county level. With the above data, 41.5% of rental-occupied households (3,828 households) are currently living over the benchmark for affordable housing set by HUD.

The following *tables 39-41 (next page)* clearly indicate that the lowest income earning households are spending the highest percent of their income on housing.

Table 39: Jefferson County: Renter-Occupied Household Spending on Housing			
Yearly Income	Total Rent-Occupied Households	Number of Households Spending More Than 30% of Average Monthly Income on Housing Costs	Number of Households Spending More Than 20% of Average Monthly Income on Housing Costs
Less than $20,000	1,804	1,527	1,680
$20,000 to $34,999	2,411	1,758	2,296
$35,000 to $49,999	1,600	454	1,309
$50,000 to $74,999	1,673	89	675
$75,000 or more	1,737	0	82
Total	**9,225**	**3,828**	**6,042**

**Zero or negative income: = 1.5%*

***Calculated using American Community Survey (2015-2019) data*

Table 40: Jefferson: Gross Rent of Occupied Units		
	Estimate	% of Total Units Paying Rent
Median (dollars)	$857	-
Occupied units paying rent	9,374	100%
Less than $500	865	9.2%
$500 to $999	5,664	60.4%
$1,000 to $1,499	2,512	26.8%
$1,500 to $1,999	245	2.6%
$2,000 to $2,499	11	0.1%
$2,500 to $2,999	19	0.2%
$3,000 or more	58	0.6%

**Source: ACS 5-year (2015-2019) estimate*

Table 41: Jefferson County: Renter-Occupied Housing Costs by Income Bracket			
Yearly Income	% of Renter-Occupied Households in Income Bracket	Monthly Housing Costs as a Percentage of Average Monthly Income	% of Renter-Occupied Households for Specified Housing Cost
Less than $20,000	18.3%	Housing Costs are Less Than 20 Percent of Income	7%
		Housing Costs are 20 to 29 Percent of Income	9%
		Housing Costs are 30 Percent or More of Income	85%
$20,000 to $34,999	24.5%	Housing Costs are Less Than 20 Percent of Income	5%
		Housing Costs are 20 to 29 Percent of Income	22%
		Housing Costs are 30 Percent or More of Income	73%
$35,000 to $49,999	16.3%	Housing Costs are Less Than 20 Percent of Income	18%
		Housing Costs are 20 to 29 Percent of Income	53%
		Housing Costs are 30 Percent or More of Income	28%
$50,000 to $74,999	17.0%	Housing Costs are Less Than 20 Percent of Income	59%
		Housing Costs are 20 to 29 Percent of Income	35%
		Housing Costs are 30 Percent or More of Income	5%
$75,000 or more	17.7%	Housing Costs are Less Than 20 Percent of Income	95%
		Housing Costs are 20 to 29 Percent of Income	5%
		Housing Costs are 30 Percent or More of Income	0%
No Cash Rent	4.7%	-	-

**Zero or negative income: = 1.5%*
***Calculated using American Community Survey (2015-2019) data*

Tables 39-41 indicate that rental-occupied households with less than $50,000 in income have limited rental resources. We can also see that 63.8% of rental-occupied households fall under that $50,000 income mark, representing a large share of the rental market in Jefferson County. Furthermore, nearly all (96.4%) of rent prices fall within the $500-1,500 range. The demographics struggling the most with affordable housing options are those rental households earning less than $20,000, of which 85% spend more than 30% of their income on housing costs, and those earning between $20,000 and $34,999, of which 73% are spending more than 30% of their income on housing costs.

Based on the slow building permit trends in Jefferson County and in combination with the number of renters in lower income brackets paying more than what is considered affordable,

there may be an opportunity in the rental market to offer lower cost units to households earning less than $50,000. However, on its face, the data further suggests that the number of rental-occupied units has fallen since 2018 and the population of Jefferson County has barely increased since 2010, indicating a low influx of demand.

Part 3: Municipalities Within Jefferson County

Methodology & Section Overview

For ten municipalities within Jefferson County, measures similar to those used in the county-wide section is analyzed to determine the state of the housing market in those local municipalities. The municipalities analyzed are the City of Jefferson, the City of Fort Atkinson, the City of Lake Mills, the City of Waterloo, the City of Watertown, the City of Whitewater, the Village of Cambridge, the Village of Johnson Creek, the Village of Palmyra, and the Village of Sullivan. For the sake of brevity, these municipalities are referred to simply as Fort Atkinson, Lake Mills, Waterloo, Watertown, Whitewater, Cambridge, Johnson Creek, Palmyra, Sullivan, and the City of Jefferson (to distinguish the City of Jefferson from Jefferson County). In addition, while a number of these communities occupy more than one county, the entire municipality boundary area is included in this analysis.

Specifically, for each municipality, the following metrics are calculated and interpreted where appropriate:

1. Median home sale price over time
2. Current months' supply of housing
3. Household Income
4. Gross Rent and Rent affordability
5. Housing affordability (ALICE)
6. Projected household and housing unit growth

Measures

Home Sale Price

Home price appreciation for municipalities is calculated using home sale data from the Wisconsin Department of Revenue which records real estate transfers. The median home sale prices for the last five years are also calculated using the home sales records. This data is narrow capturing actual single-family home sales within a given time period. The municipalities' median home prices are then compared to Jefferson County median home prices. Unlike Jefferson County, the sample size of homes sold in a year is much smaller for the municipalities and, therefore, the estimate of the median home price is more sensitive to random variation in the sample from year to year.

Months' Inventory

The Months' Supply of Housing is important for estimating housing demand because it provides insight on the rate at which houses are selling, compared to the unused supply of homes. The Months' Supply of Housing is calculated by taking the number of for-sale homes and dividing it by the number of sales per month over a certain period (in this case 1 year). This metric can also be reframed as the Absorption Rate, which just describes the percent of the existing for-sale homes that would be sold in 1 month if homes continued to sell at the same rate (e.g., a 3 months' supply of housing corresponds to a 33.3% absorption rate, as 1 month supply/3 months' supply = 33% sold in a single month).

The Average # of Homes for Sale figure is recorded on a zip code basis while home sales are recorded based on municipality boundaries. Zip codes often do not correspond to jurisdiction

boundaries, and in Jefferson County's case, can extend beyond jurisdiction boundaries. Therefore, the Average # of Homes for Sale metric may be slightly overstated for each municipality. This would result in an overestimate of the inventory.

Household Income

Using data from the U.S. Census Bureau's American Community Survey (ACS), the distribution of household income is analyzed for each municipality.

The historical and projected trends of the distribution of household income is also analyzed. However, due to the small sample sizes of available data, the historical and projected trends should be taken as very rough estimates

Gross Rent

Using data from the American Community Survey, the cost of rent for each municipality is analyzed by looking at the distribution of Gross Rent across 5 price brackets. In other words, what proportion of all renter-occupied units had a Gross Rent of less than $500, what proportion of all renter-occupied housing units had a Gross Rent between $500 and $999, and so on for other price brackets.

For Johnson Creek, Lake Mills, Watertown, and the City of Jefferson, this distribution of gross rent is estimated for the five-year time period of 2010-2014 as well as the five-year time period of 2015-2019. The change in the distribution of gross rent between these two time periods is compared. A statistical test is also used for each price bracket which determines if it is possible to be at least 90% sure that the actual value changed between the two time periods, and that the change is not a result of a chance variation between the two samples. Since the statistical test failed for all price brackets within Waterloo, the distribution of gross rent is not compared over time for Waterloo since a comparison is more likely to reflect chance variation rather than an actual trend in the data.

Gross Rent as a Percentage of Household Income

Similar to the method used for Jefferson County as a whole, the affordability of rent for each municipality is analyzed by looking at the proportion of renter households that pay less than 15% of their household income towards rent, the proportion of renter households that pay between 15% and 19% of their household income towards rent, and so on for additional affordability brackets.

For Johnson Creek, Lake Mills, and the City of Jefferson, the distribution of gross rent is estimated for the five-year time period of 2010-2014 as well as the five-year time period of 2015-2019. The change in the distribution of gross rent as a percentage of household income between these two time periods is compared for these municipalities. A statistical test is also used for each price bracket which determines if it is possible to be at least 90% sure that the actual value changed between the two time periods, and that the change is not a result of a chance variation between the two samples. Since the statistical test failed for all affordability brackets within Waterloo and Watertown, the distribution of gross rent is not compared over time for those municipalities since a comparison is more likely to reflect chance variation rather than an actual trend in the data.

United For ALICE Households

In addition to looking at gross rent as a percentage of income, the number of ALICE, or Assist Limited, Income Constrained, Employed, households in each municipality were also analyzed. United For ALICE data takes into consideration the cost of living in different states, counties,

and municipalities providing further insight into households' ability to afford housing in each municipality. Based upon the cost of living, ALICE compiles a survival budget which estimates the annual income required to afford the most basic of living expenses including housing. For example, a household with two adults and two school aged children require a minimum annual income of $56,976 to afford housing and other basic living necessities.

In the ALICE Survival budget, single adult households are allocated $527 to spend on monthly housing costs, cohabiting adults are allocated $618, and households with children are allocated $822. These numbers come from the 2018 Housing and Urban Development's fair market rental pricing for efficient, single-bedroom, and two-bedroom apartments. Households are designated as ALICE if they fall below the ALICE Threshold, but are above the Federal poverty line. Households with income that falls below the threshold set by the ALICE survival budget will either be unable to afford these fair market housing prices and require housing with lower monthly costs, will need to forgo other necessities to afford housing, or will need additional monetary support.

Projected Household and Housing Unit Growth

The projected increase in households between 2020 and 2030 was compared to current new housing construction rates for each of the municipalities. The DOA's household projections were used to estimate household growth over the next ten years. To estimate recent construction rates, the ACS's estimates for the number of new housing units built in each municipality since 2010 were used. Keep in mind that due to the smaller sample sizes, the municipality projections tend to have wide margin of errors.

A. City of Jefferson

Home Sale Price

The City of Jefferson witnessed a 25.5% increase in the median single-family home sale price from 2016 to 2020. Home values appreciated in the City of Jefferson at a significantly slower rate compared to Jefferson County as a whole. However, as with all of the data contained in the community analysis, caution needs to be considered as the size of the number of sales (and other items) can be quite small.

Table 42: City of Jefferson: Median Close Price

Year	Median Home Price	Increase from Previous Year	Total % Appreciation Since 2016
2016	$148,250	-	-
2017	$149,750	1.0%	1.0%
2018	$170,000	13.5%	14.7%
2019	$170,000	0.0%	14.7%
2020*	$187,950	10.6%	26.8%

**Data from January-October 2020*
***Source: Wisconsin Department of Revenue*

Table 43: Jefferson County: Median Close Price

Year	Median Home Price	Increase from Previous Year	Total % Appreciation Since 2016
2016	$170,000	-	-
2017	$175,500	3.2%	3.2%
2018	$195,000	11.1%	14.7%
2019	$214,200	9.8%	26.0%
2020*	$233,000	8.8%	37.1%

Months' Inventory

The data indicates that homes in the City of Jefferson are selling quickly. The City of Jefferson has a month's supply of housing of 2.16. Six months of supply is considered the optimal months' supply in a balanced market. The City of Jefferson is below this threshold.

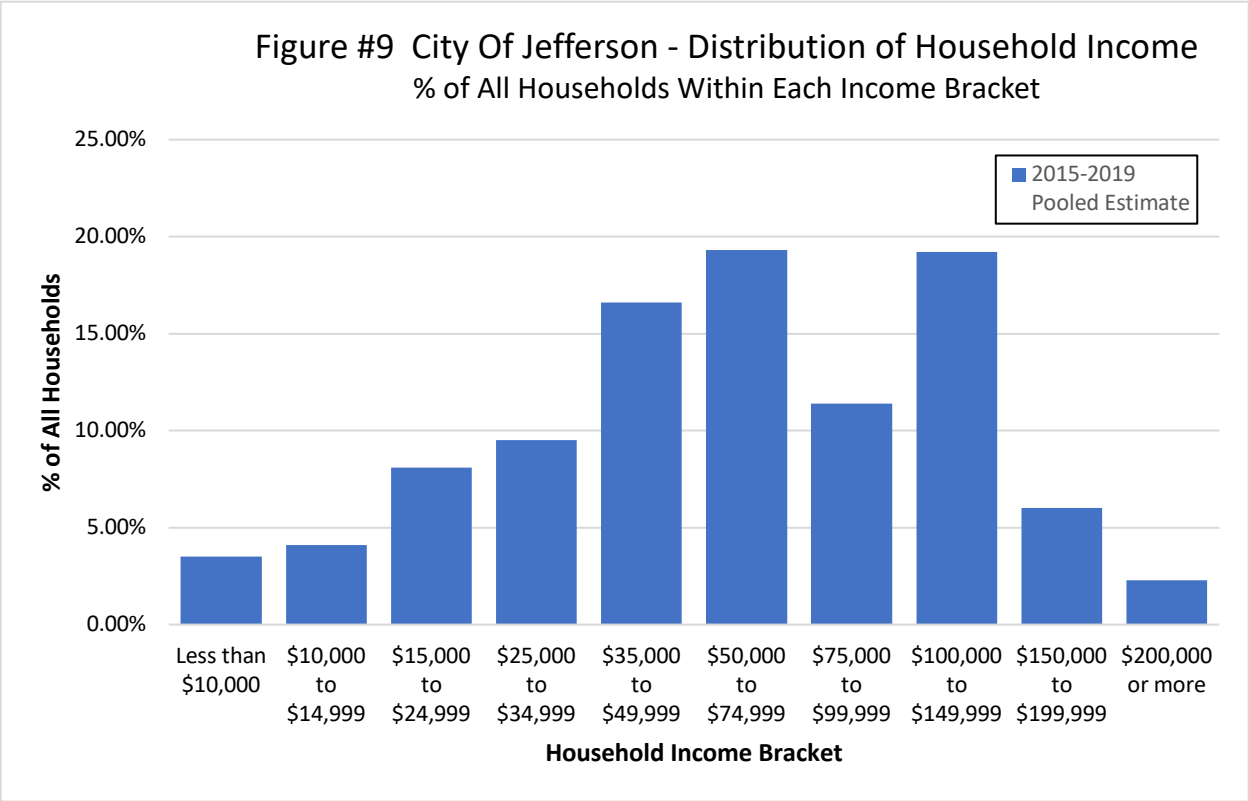
Table 44: City of Jefferson Months' Inventory: Single-Family

	Homes Sold	Months	Average # of Homes Sold Per Month	Average # of Homes Available to be Sold	Month's Supply of Housing	Absorption Rate
2016	94	12	7.8	63	8.06	12.4%
2017	94	12	7.8	41	5.26	19.0%
2018	92	12	7.7	28	3.63	27.6%
2019	90	12	7.5	26	3.40	29.4%
2020*	77	10	7.7	17	2.16	46.2%

**Data from January - October 2020*
***Source: Realtor.com and Wisconsin Department of Revenue*

Household Income

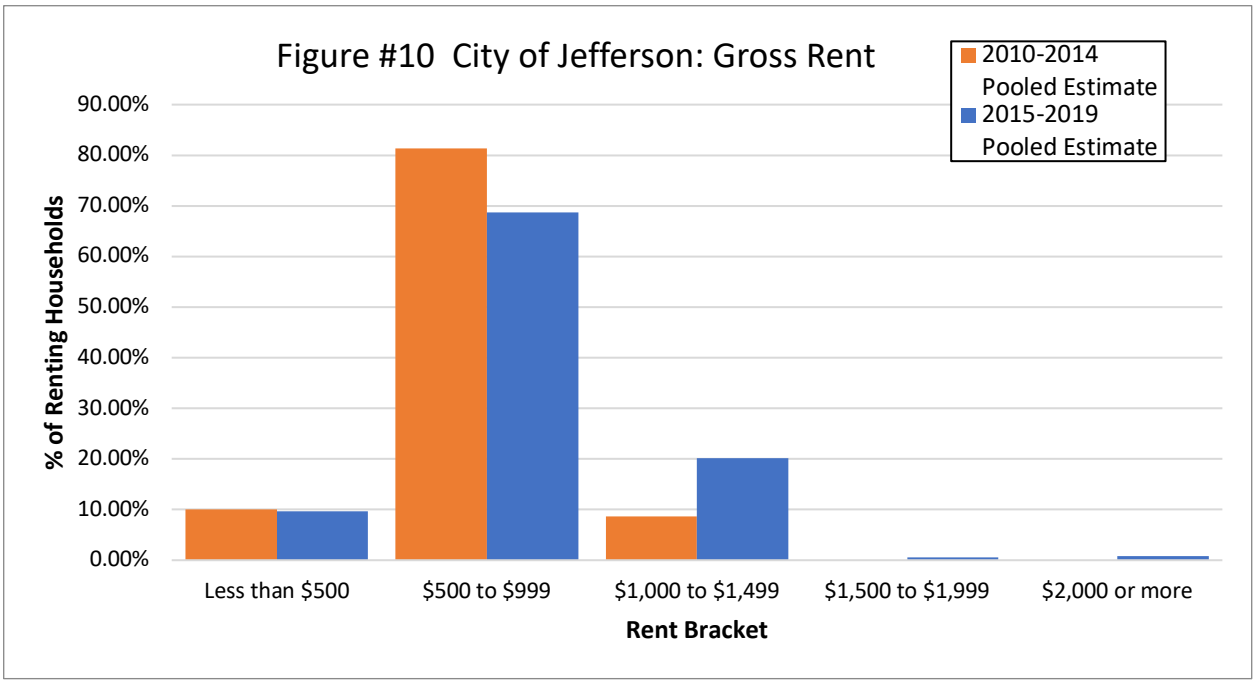
The distribution of household income for the City of Jefferson is shown below. Household income in an area has important implications for affordability of housing, both for renter households and homeowner households.

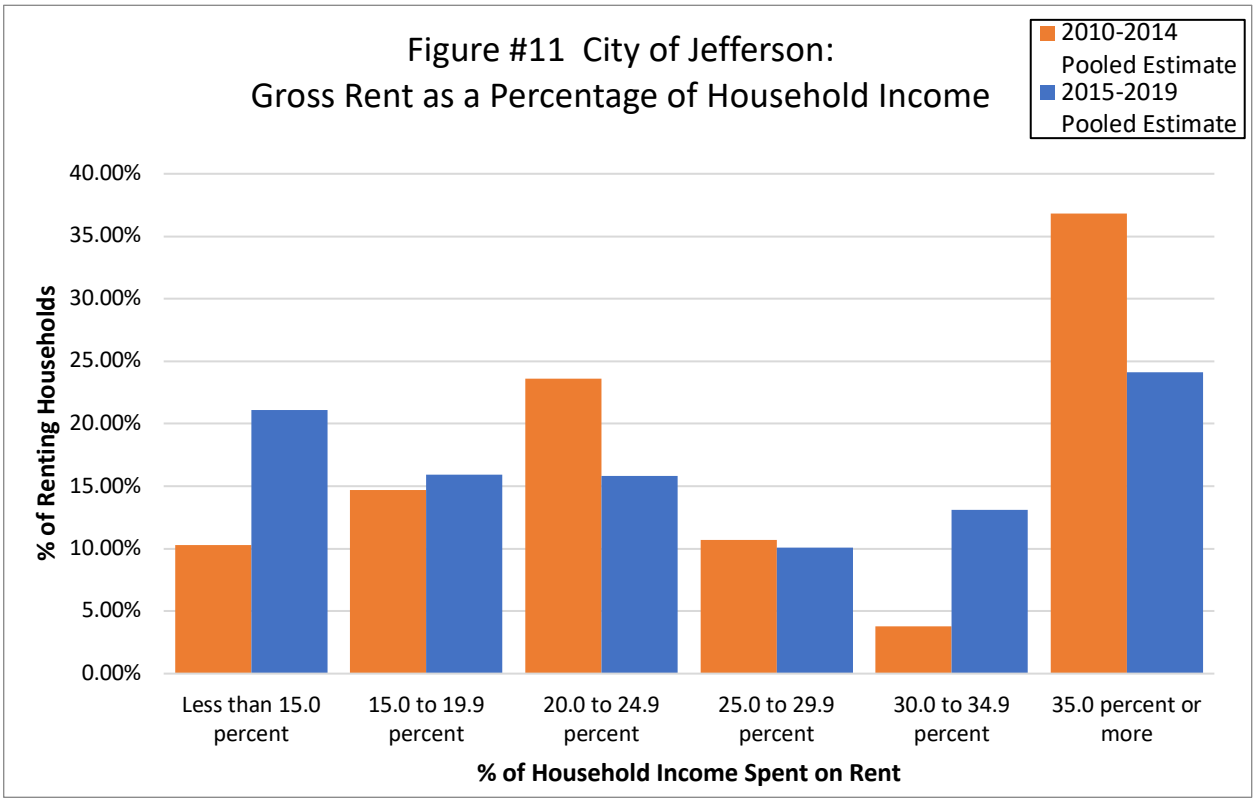


Source: ACS 5-year estimates

Gross Rent & Gross Rent as a Percentage of Household Income

The distribution of gross rent shifted from the first half of the decade to the second half of the decade. Figure #10 shows the shift such that a larger proportion of renters paid $1000-$1499 in the late 2010's than in the early 2010's, and a smaller proportion of renters paid $500-$999 in the late 2010's as compared to the early 2010's. Note that the data is not inflation adjusted.





Source: ACS 5-year estimates

United For ALICE Households

Based on calculations from the American Community Survey and the ALICE Threshold in 2018, the City of Jefferson had 950 households (31%) classified as ALICE and an additional 232 households (7%) fall below the Federal Poverty Level. The total number of households in 2018 below the ALICE Threshold in the City of Jefferson is 1,182 which makes up 38% of all households in the municipality. Compared to Jefferson County which had 31% of households below the ALICE Threshold, the City of Jefferson has a notably higher concentration of ALICE households.

Table 45: ALICE Households in City of Jefferson: 2018

Total Households	Households Below the Poverty Line	ALICE Households	Total Households Below ALICE Threshold	% of Households Below ALICE Threshold
3,114	232	950	1,182	38%

**Source: United For ALICE 2018, US Census Bureau ACS 5-year estimates*

Projected Household and Housing Unit Growth

The projected growth of housing units in the City of Jefferson was estimated in 2008 in their Comprehensive Plan as prepared by Vanderwalle and Associates. Note that this plan was developed just prior to the recession, during the housing boom. As a result, this plan could not fully anticipate the challenges presented by the recession. This condition is consistent with many comprehensive plans. The plan projected that from 2010-2020 the number of new housing units built in the City of Jefferson would equal 544. According to the ACS, only 78 units have been built in the City of Jefferson since 2010. This drastically lower increase in new housing supply can be partially attributed to the housing crash in 2008 and recent suppressed household growth rates. The recent low rates of construction are not adequate to keep up with projected household growth over the next ten years.

Household population growth projections can be used to estimate the future demand for new housing units. The Wisconsin Department of Administration (DOA) household growth projections, which were completed in 2013 using 2010 census data, provide an estimate for the projected increase in the number of households in the City of Jefferson between the years 2020 to 2030. The DOA projected that households in the City of Jefferson will increase by 301 from 2020-2030. However, the DOA projections have overestimated household growth over recent years. If the DOA's projection is adjusted to reflect current household estimates, it indicates that households in the City of Jefferson will grow by 284 households between 2020 and 2030.

If the number of new housing units built from 2020-2030 mirrors the number of housing units built since 2010, the City of Jefferson is on track to have a housing shortage of 206 units. This projection assumes the number of households will grow according to DOA projections, and that new housing construction and home vacancy rates remain relatively constant. As the number of households in the City of Jefferson continues to increase, the current available housing supply will become further depleted as new construction rates fall short of keeping up with demand. Households unable to find adequate available housing in the City of Jefferson may begin to expand their search beyond the municipality to find housing that meets their needs. This outlook indicates that home prices will continue to rise and the number of homes available for-sale on

the market will continue to decrease. Buyers will have very little bargaining power which will further exacerbate the issues of supplying adequate housing, especially for Asset Limited, Income Constrained, Employed (ALICE) households.

Table 46: City of Jefferson: Housing Units and Households			
Housing Units	Household Estimate	Housing Units Built Since 2010	Vacant Housing Units
3,548	3,250	78	298

**Source: ACS 5-year (2015-2019) estimate*

Table 47: City of Jefferson: Projected Household Growth		
Housing Units Built Since 2010	Adjusted DOA Projection for Household Growth 2020-2030	Projected Housing Shortage
78	284	**(206)**

**Source: ACS 5-year (2015-2019) estimate, DOA*

B. City of Fort Atkinson

Home Prices

Fort Atkinson had a low rate of home price appreciation in 2019. Our estimate indicates a 20.5% increase in the median single-family home value price from 2016 to 2019. Home values appreciated in Fort Atkinson at a slower rate than Jefferson County as a whole.

Table 48: Fort Atkinson: Median Home Price

Year	Median Home Price	Increase from Previous Year	Total % Appreciation Since 2016
2016	$146,000	-	-
2017	$152,000	4.1%	4.1%
2018	$160,000	5.3%	9.6%
2019	$176,000	10.0%	20.5%

**Source: Zillow Home Value Index*

Table 49: Jefferson County: Median Close Price

Year	Median Home Price	Increase from Previous Year	Total % Appreciation Since 2016
2016	$170,000	-	-
2017	$175,500	3.2%	3.2%
2018	$195,000	11.1%	14.7%
2019	$214,200	9.8%	26.0%

**Source: Wisconsin Department of Revenue*

Months' Supply of Housing

The data also indicates homes in Fort Atkinson are selling quickly. Fort Atkinson has a month's supply of housing of 3.05 in 2019. Six months of supply is considered the optimal months' supply in a balanced market. Fort Atkinson is below this threshold.

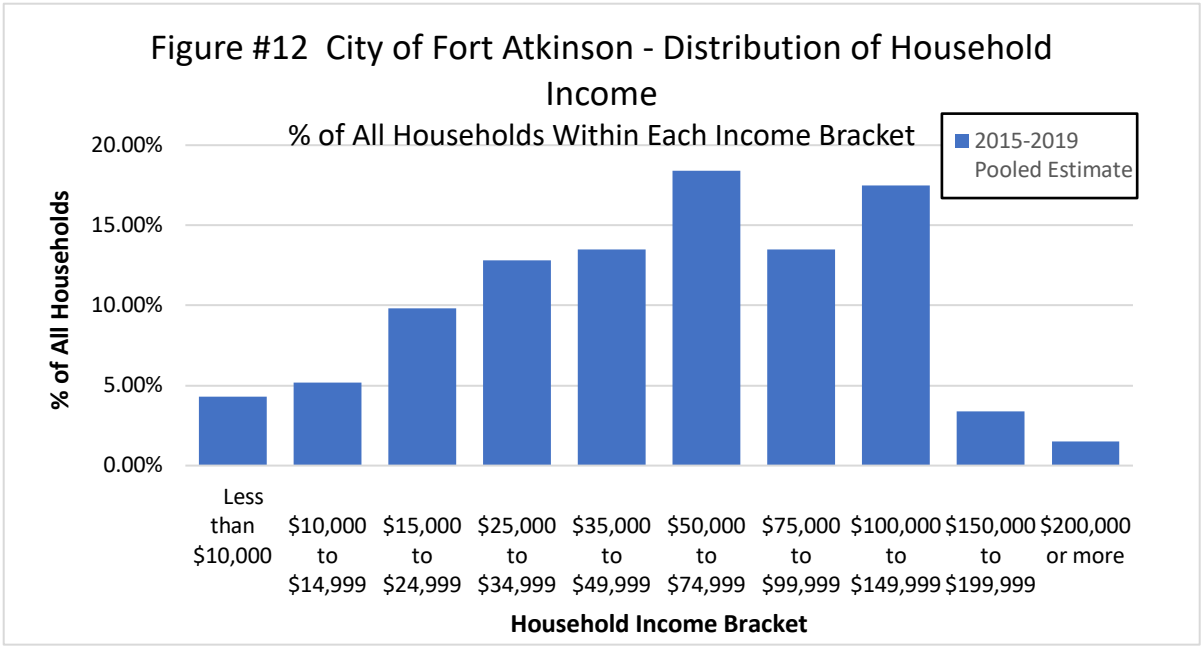
Table 50: City of Fort Atkinson: Months' Inventory: Single-Family

	Homes Sold	Months	Average # of Homes Sold Per Month	Number of Homes Available to be Sold	Month's Supply of Housing	Absorption Rate
07/19	181	12	15.1	46	3.05	32.8%

**Source: Table created using data from Zillow.com on 7/19*

Household Income

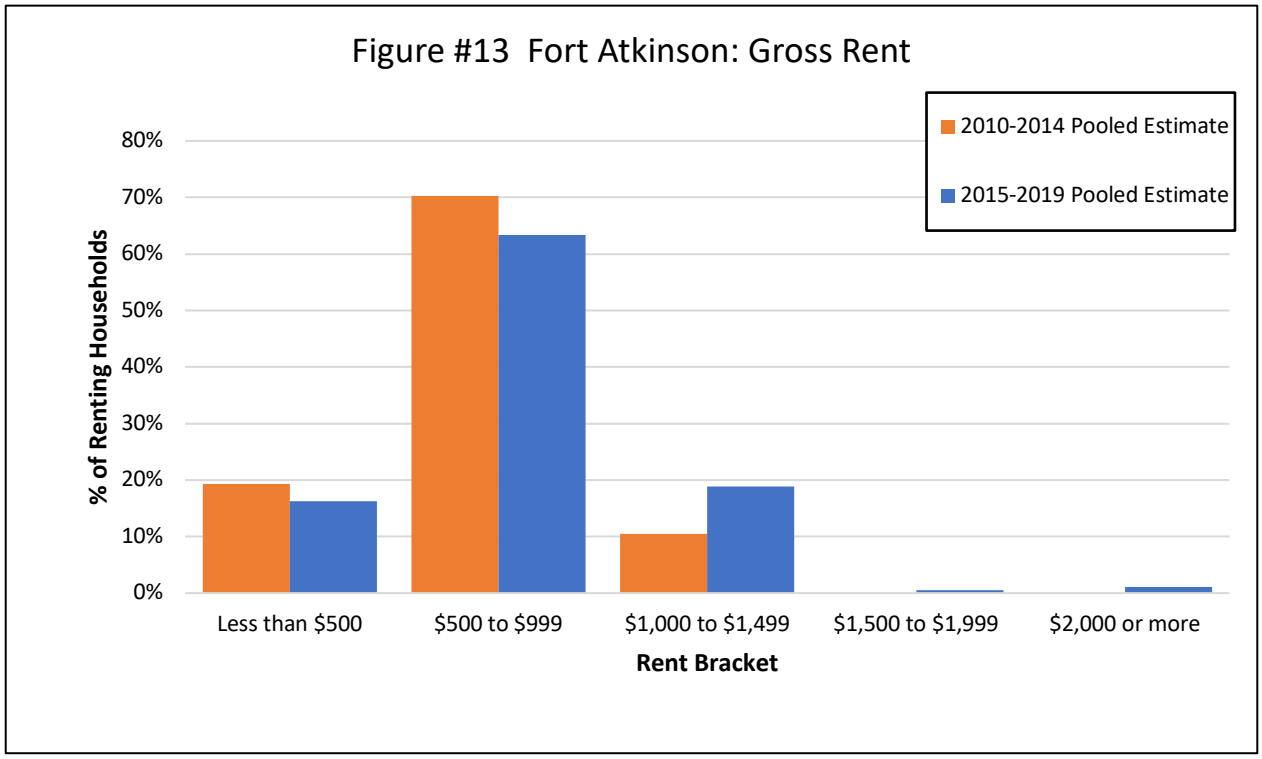
The distribution of household income for the City of Fort Atkinson is shown below (Figure #12). Household income in an area has important implications for affordability of housing, both for renter households and homeowner households. The changes are consistent with the City of Jefferson.



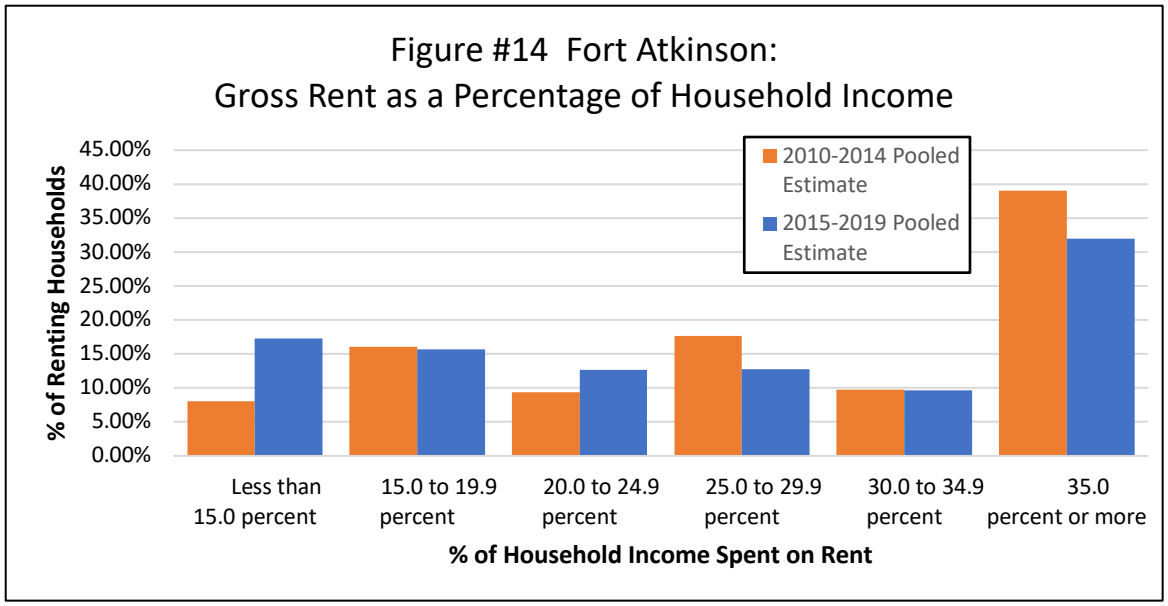
Source: ACS 5-year estimates

Gross Rent & Gross Rent as a Percentage of Household Income

Note that the data is not inflation adjusted.



Source: ACS 5-year estimates



Source: ACS 5-year estimates

United For ALICE Households

Based on calculations from the American Community Survey and the ALICE Threshold in 2018, Fort Atkinson had 1,390 households (28%) classified as ALICE and an additional 662 households (13%) fall below the Federal Poverty Level. The total number of households in 2018 below the ALICE Threshold in Fort Atkinson is 2,052 which makes up 41% of all households in the municipality. Compared to Jefferson County which had 31% of households below the ALICE Threshold, Fort Atkinson has a higher distribution of ALICE households.

Table 51: ALICE Households in Fort Atkinson: 2018

Total Households	Households Below the Poverty Line	ALICE Households	Total Households Below ALICE Threshold	% of Households Below ALICE Threshold
4,954	662	1,390	2,052	41%

Source: United For ALICE 2018, US Census Bureau ACS 5-year estimates

Projected Household and Housing Unit Growth

Housing unit growth has been low over the last ten years. According to the ACS, only 34 units have been built in Fort Atkinson since 2010. This low increase in new housing supply can be partially attributed to the recession and recent suppressed household growth rates. The recent low rates of construction are not adequate to keep up with projected household growth over the next ten years. If new housing unit construction continues at this slow pace, the population will not grow.

Household population growth projections can be used to estimate the future demand for new housing units. The Wisconsin Department of Administration (DOA) household growth projections, which were completed in 2013 using 2010 census data, provide an estimate for the projected increase in the number of households in Fort Atkinson between the years 2020 to 2030. The DOA projected that households in Fort Atkinson will increase by 465 from 2020-2030.

However, the DOA projections have overestimated household growth over recent years. If the DOA's projection is adjusted to reflect current household estimates, it indicates that households in Fort Atkinson will grow by 413 households between 2020 and 2030.

If the number of new housing units built from 2020-2030 mirrors the number of housing units built since 2010, Fort Atkinson is on track to have a housing shortage of 379 units. This projection assumes the number of households will grow according to DOA projections, and that new housing construction and home vacancy rates remain relatively constant. As the number of households in Fort Atkinson continues to increase, the current available housing supply will become further depleted as new construction rates fall short of keeping up with demand. Households unable to find adequate available housing in Fort Atkinson may begin to expand their search beyond the municipality to find housing that meets their needs. This outlook indicates that home prices will continue to rise and the number of homes available for-sale on the market will continue to decrease. Buyers will have very little bargaining power which will further exacerbate the issues of supplying adequate housing, especially for Asset Limited, Income Constrained, Employed (ALICE) households.

Table 52: Fort Atkinson: Housing Units and Households

Housing Units	Household Estimate	Housing Units Built Since 2010	Vacant Housing Units
5,422	5,009	34	413

**Source: ACS 5-year (2015-2019) estimate*

Table 53: Fort Atkinson: Projected Household Growth

Housing Units Built Since 2010	Adjusted DOA Projection for Household Growth 2020-2030	Projected Housing Shortage
34	413	**(379)**

**Source: ACS 5-year (2015-2019) estimate, DOA*

C. City of Lake Mills

Home Sale Price

Lake Mills witnessed a 43.8% increase in the median single-family home sale price from 2016 to 2020. Home values appreciated in Lake Mills at a slightly faster rate compared to Jefferson County as a whole.

Table 54: Lake Mills City: Median Close Price			
Year	Median Home Price	Increase from Previous Year	Total % Appreciation Since 2016
2016	$182,250	-	-
2017	$205,000	12.5%	12.5%
2018	$219,500	7.1%	20.4%
2019	$235,000	7.1%	28.9%
2020*	$262,000	11.5%	43.8%

Table 55: Jefferson County: Median Close Price			
Year	Median Home Price	Increase from Previous Year	Total % Appreciation Since 2016
2016	$170,000	-	-
2017	$175,500	3.2%	3.2%
2018	$195,000	11.1%	14.7%
2019	$214,200	9.8%	26.0%
2020*	$233,000	8.8%	37.1%

**Data from January-October 2020*
***Source: Wisconsin Department of Revenue*

Months' Inventory

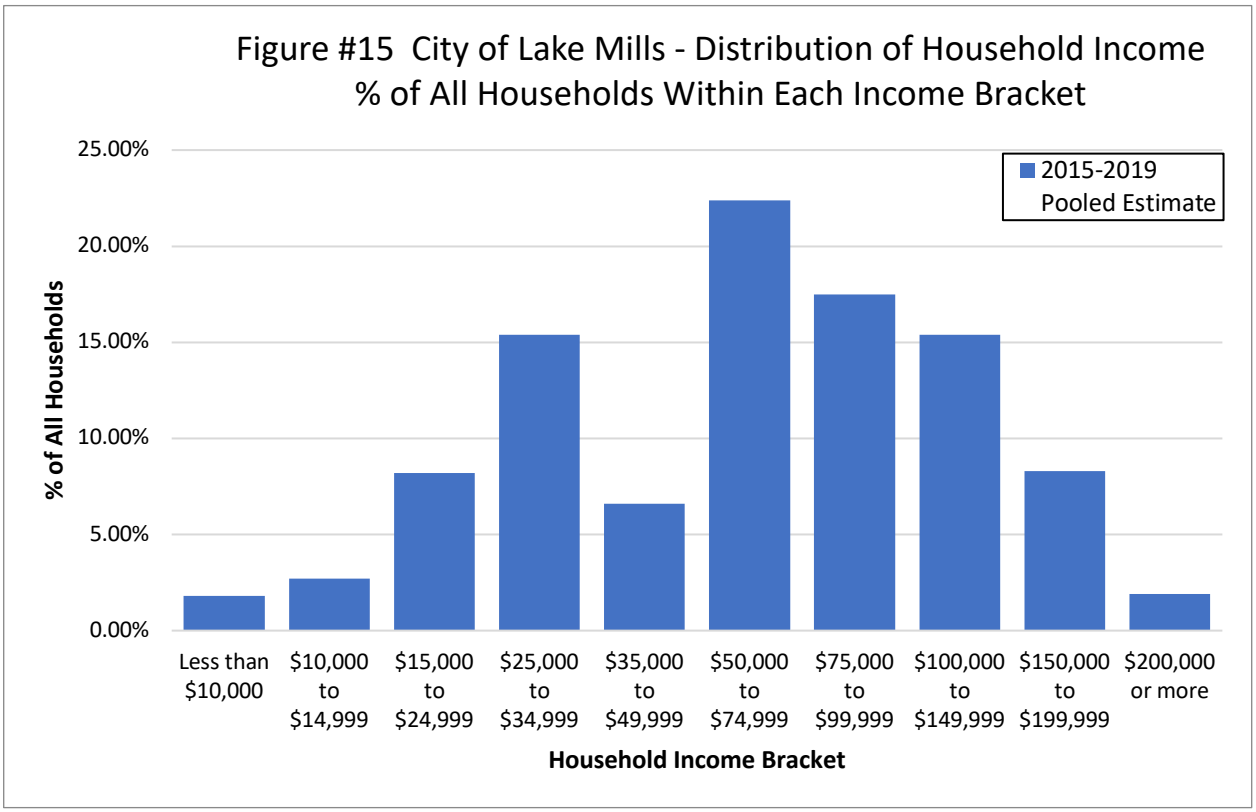
The data also indicates homes in Lake Mills are selling quickly. Lake Mills has a month's supply of housing of 4.59. Six months of supply is considered the optimal months' supply in a balanced market. Lake Mills is slightly below this threshold indicating homes are selling rapidly due to high demand. Although Lake Mills has a month's supply below the six-month threshold, it is higher than other analysis municipalities suggesting homes are selling less rapidly in Lake Mills compared with nearby municipalities.

Table 56: City of Lake Mills Months' Inventory: Single-Family						
	Homes Sold	Months	Average # of Homes Sold Per Month	Average # of Homes Available to be Sold	Month's Supply of Housing	Absorption Rate
2016	110	12	9.2	96	10.49	9.5%
2017	95	12	7.9	67	8.47	11.8%
2018	96	12	8.0	53	6.63	15.1%
2019	119	12	9.9	47	4.70	21.3%
2020*	80	10	8.0	37	4.59	21.8%

**Data from January - October 2020*
***Source: Realtor.com and Wisconsin Department of Revenue*

Household Income

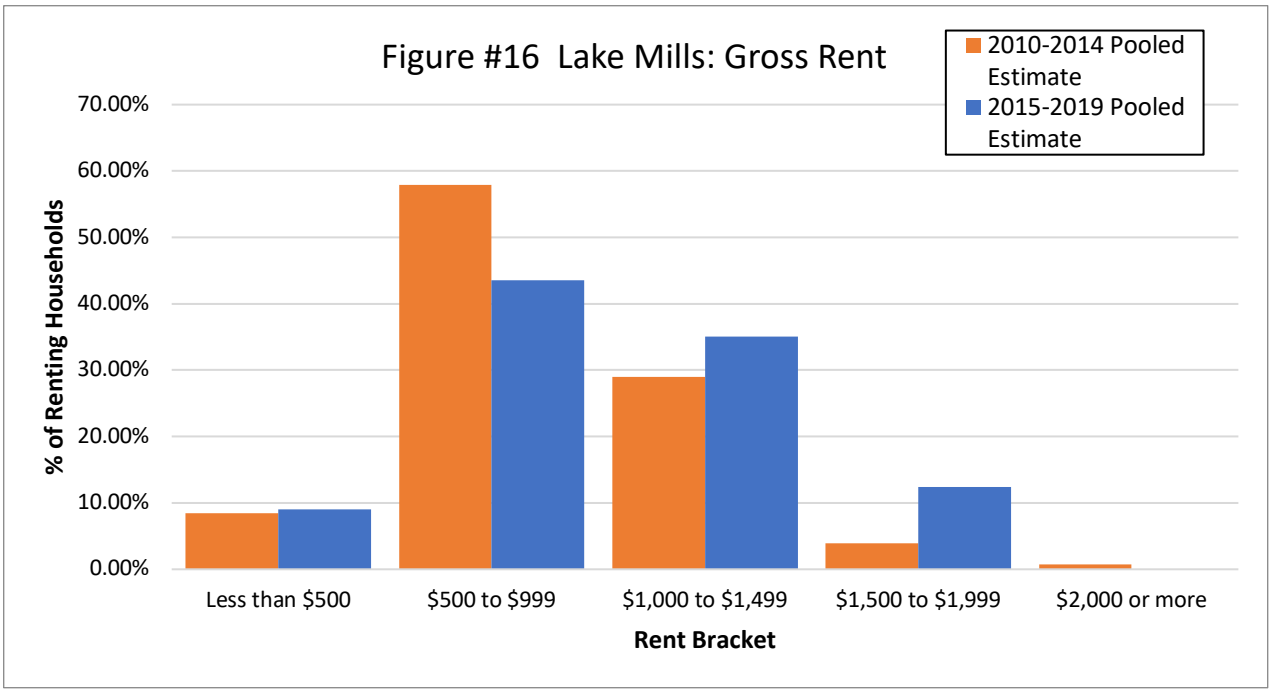
The distribution of household income for Lake Mills has important implications for affordability of housing, both for renter households and homeowner households.

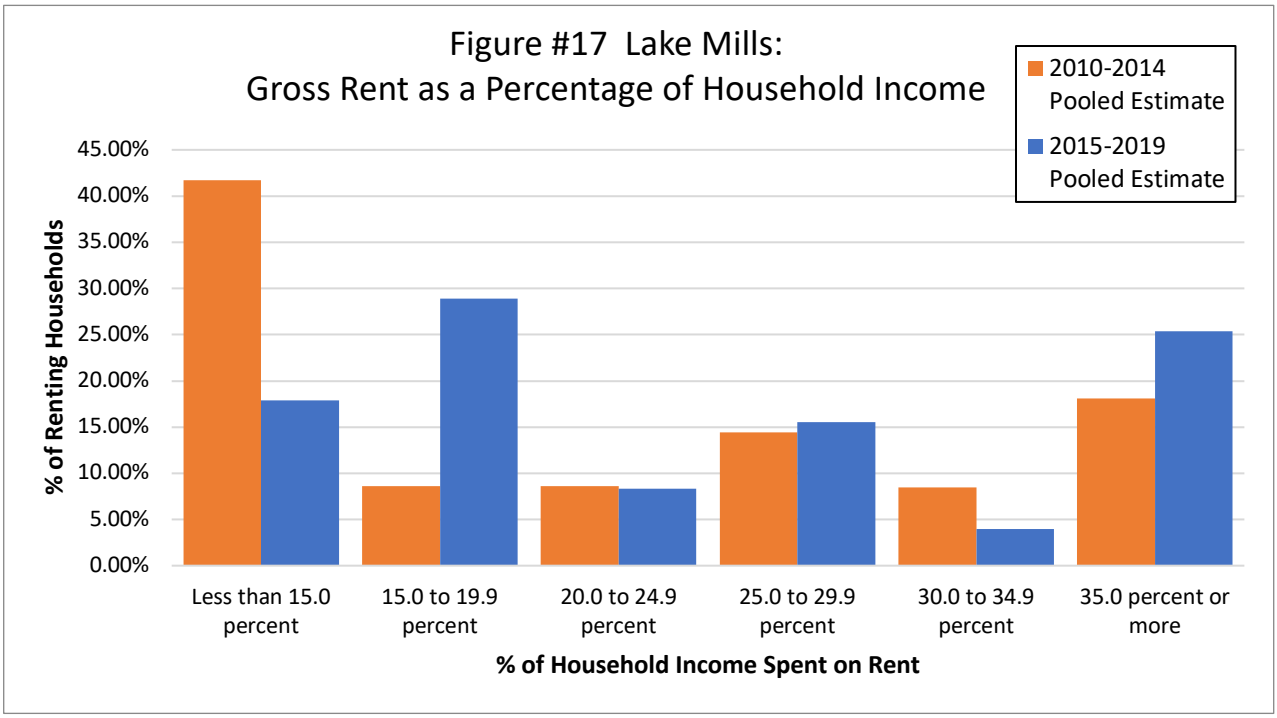


**Source: ACS 5-year estimates*

Gross Rent & Gross Rent as a Percentage of Household Income

There is evidence that the distribution of gross rent shifted from the first half of the decade to the second half of the decade. A larger proportion of renters paid $1000-$1499 or $1500-$1999 in the late 2010's than in the early 2010's, and a smaller proportion of renters paid $500-$999 in the late 2010's as compared to the early 2010's (Figure #16). Note that the data is not inflation adjusted. Gross rent as a percentage of household income also changed and indicates a decrease in affordability.





**Source: ACS 5-year estimates*

United For ALICE Households

Based on calculations from the American Community Survey and the ALICE Threshold in 2018, the Lake Mills had 515 households (21%) classified as ALICE and an additional 214 households (9%) fall below the Federal Poverty Level. The total number of households in 2018 below the ALICE Threshold in Lake Mills is 729 which makes up 30% of all households in the municipality. Compared to Jefferson County which had 31% of households below the ALICE Threshold, Lake Mills has a very similar distribution of ALICE households.

Table 57: ALICE Households in Lake Mills: 2018				
Total Households	Households Below the Poverty Line	ALICE Households	Total Households Below ALICE Threshold	% of Households Below ALICE Threshold
2,409	214	515	729	30%

**Source: United For ALICE 2018, US Census Bureau ACS 5-year estimates*

Projected Household and Housing Unit Growth

The projected growth of housing units in the City of Lake Mills was estimated in 2009 in their Comprehensive Plan as prepared by Vanderwalle and Associates. Note that this plan was developed during the recession, just as the housing collapse occurred. As a result, this plan could not fully anticipate the challenges presented by the recession. This condition is consistent with many comprehensive plans. The plan projected that from 2010-2020 the number of new housing units built in Lake Mills would equal 303. According to the ACS, only 160 units have been built in Lake Mills since 2010. This lower increase in new housing supply can be partially attributed to the housing crash and recent suppressed household growth rates. The recent low rates of construction are not adequate to keep up with projected household growth over the next ten years.

Household population growth projections can be used to estimate the future demand for new housing units. The Wisconsin Department of Administration (DOA) household growth projections, which were completed in 2013 using 2010 census data, provide an estimate for the projected increase in the number of households in Lake Mills between the years 2020 to 2030. The DOA projected that households in Lake Mills will increase by 357 from 2020-2030. However, the DOA projections have overestimated household growth over recent years. If the DOA's projection is adjusted to reflect current household estimates, it indicates that households in Lake Mills will grow by 324 households between 2020 and 2030.

If the number of new housing units built from 2020-2030 mirrors the number of housing units built since 2010, Lake Mills is on track to have a housing shortage of 164 units. This projection assumes the number of households will grow according to DOA projections, and that new housing construction and home vacancy rates remain relatively constant. As the number of households in Lake Mills continues to increase, the current available housing supply will become further depleted as new construction rates fall short of keeping up with demand. Households unable to find adequate available housing in Lake Mills may begin to expand their search beyond the municipality to find housing that meets their needs. This outlook indicates that home prices will continue to rise and the number of homes available for-sale on the market will continue to decrease. Buyers will have very little bargaining power which will further exacerbate the issues of supplying adequate housing, especially for Asset Limited, Income Constrained, Employed (ALICE) households.

Table 58: Lake Mills: Housing Units and Households			
Housing Units	Household Estimate	Housing Units Built Since 2010	Vacant Housing Units
2,758	2,415	160	343

Source: ACS 5-year (2015-2019) estimate

Table 59: Lake Mills: Projected Household Growth		
Housing Units Built Since 2010	Adjusted DOA Projection for Household Growth 2020-2030	Projected Housing Shortage
160	324	**(164)**

Source: ACS 5-year (2015-2019) estimate, DOA

D. City of Waterloo

Home Sale Price

Waterloo had a high rate of home price appreciation in the last year. Our estimate indicates a 48.7% increase in the median single-family home sale price from 2016 to 2020. Home values appreciated in Waterloo City at a higher rate compared to Jefferson County as a whole.

Table 60: Waterloo City: Median Close Price

Year	Median Home Price	Increase from Previous Year	Total % Appreciation Since 2016
2016	$152,000	-	-
2017	$152,450	0.3%	0.3%
2018	$170,000	11.5%	11.8%
2019	$185,000	8.8%	21.7%
2020*	$226,000	22.2%	48.7%

Table 61: Jefferson County: Median Close Price

Year	Median Home Price	Increase from Previous Year	Total % Appreciation Since 2016
2016	$170,000	-	-
2017	$175,500	3.2%	3.2%
2018	$195,000	11.1%	14.7%
2019	$214,200	9.8%	26.0%
2020*	$233,000	8.8%	37.1%

**Data from January-October 2020*

***Source: Wisconsin Department of Revenue*

Months' Inventory

The data indicates homes in Waterloo are selling quickly. Waterloo has a month's supply of housing of 3.61. Six months of supply is considered the optimal months' supply in a balanced market. Waterloo is below this threshold.

Table 62: City of Waterloo Months' Inventory: Single-Family

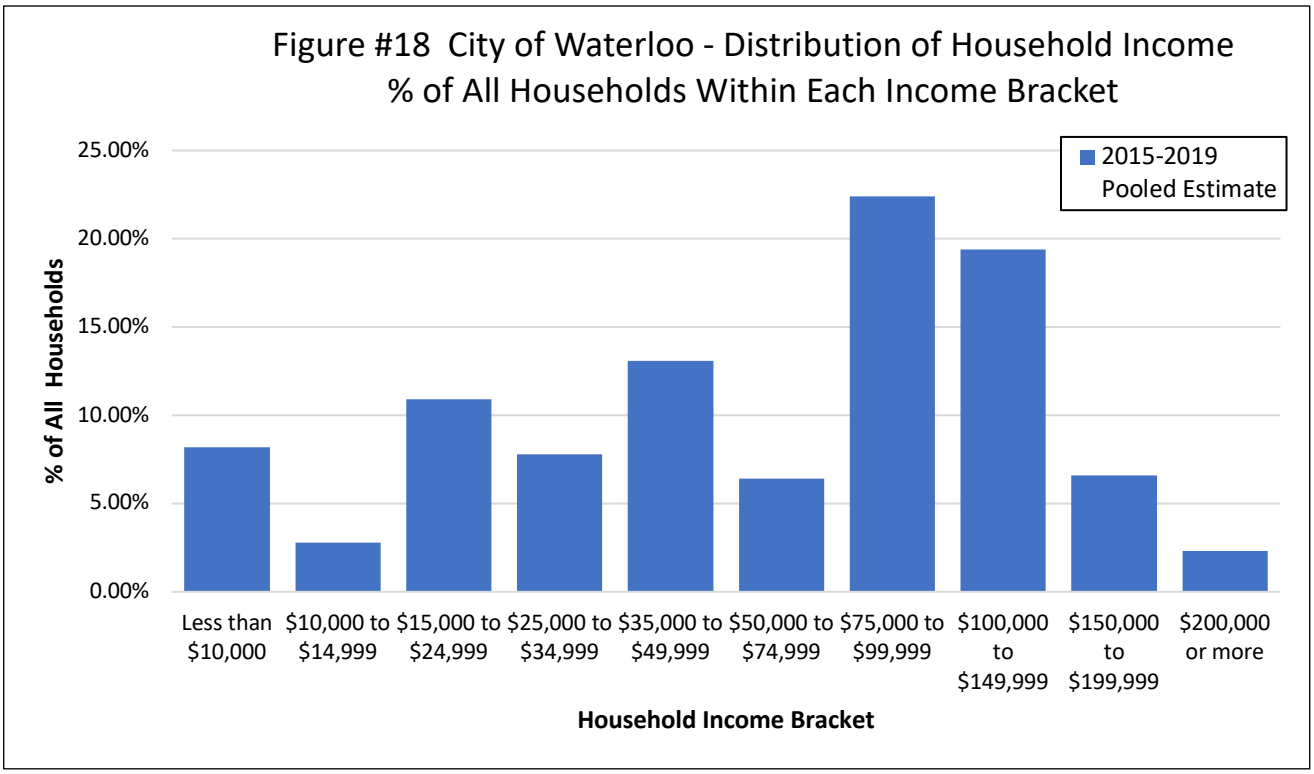
	Homes Sold	Months	Average # of Homes Sold Per Month	Average # of Homes Available to be Sold	Month's Supply of Housing	Absorption Rate
2016	49	12	4.1	29	7.06	14.2%
2017	66	12	5.5	17	3.02	33.1%
2018	47	12	3.9	14	3.51	28.5%
2019	52	12	4.3	17	3.85	26.0%
2020*	45	10	4.5	16	3.61	27.7%

**Data from January - October 2020*

***Source: Realtor.com and Wisconsin Department of Revenue*

Household Income

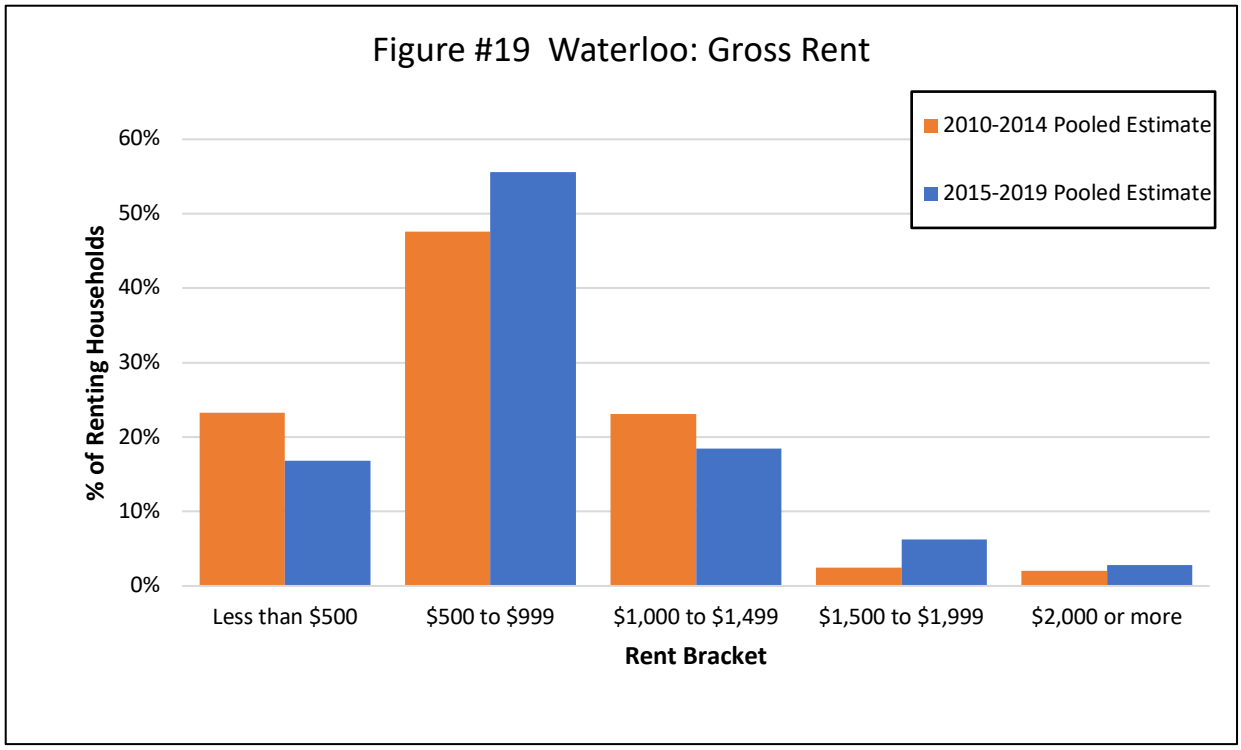
The distribution of household income for Waterloo is shown below. Household income in an area has important implications for affordability of housing, both for renter households and homeowner households.

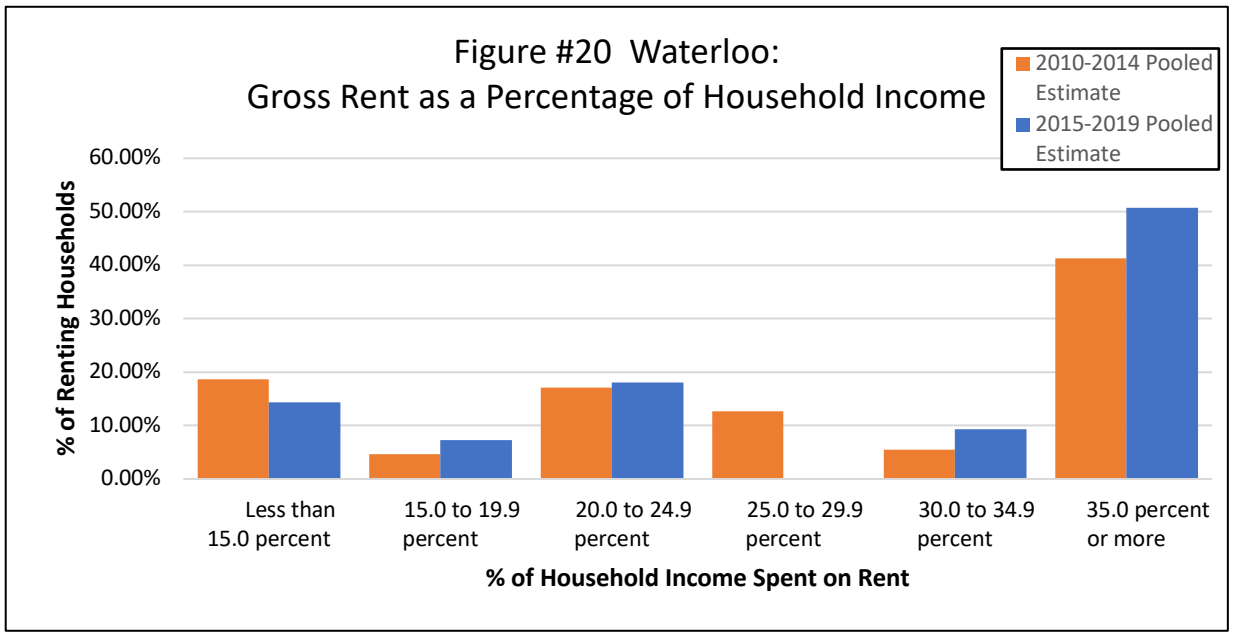


**Source: ACS 5-year estimates*

Gross Rent & Gross Rent as a Percentage of Household Income

Note that the data is not inflation adjusted.





**Source: ACS 5-year estimates*

United For ALICE Households

Based on calculations from the American Community Survey and the ALICE Threshold in 2018, Waterloo had 479 households (32%) classified as ALICE and an additional 122 households (8%) fall below the Federal Poverty Level. The total number of households in 2018 below the ALICE Threshold in Waterloo is 601 which makes up 40% of all households in the municipality. Compared to Jefferson County which had 31% of households below the ALICE Threshold, Waterloo has a higher concentration of ALICE households.

Table 63: ALICE Households in Waterloo: 2018				
Total Households	Households Below the Poverty Line	ALICE Households	Total Households Below ALICE Threshold	% of Households Below ALICE Threshold
1,506	122	479	601	40%

**Source: United For ALICE 2018, US Census Bureau ACS 5-year estimates*

Projected Household and Housing Unit Growth

The projected growth of housing units in the City of Waterloo was estimated in 2009 in their Comprehensive Plan as prepared by Vanderwalle and Associates. Note that this plan was developed during the recession, just as the housing collapse occurred. As a result, this plan could not fully anticipate the challenges presented by the recession. This condition is consistent with many comprehensive plans. The plan projected that from 2010-2020 the number of new housing units built in Waterloo would equal 206. According to the ACS, only 49 units have been built in Waterloo since 2010. This drastically lower increase in new housing supply can be partially contributed to the 2007-2009 recession and recent suppressed household growth rates. The recent low rates of construction are not adequate to keep up with projected household growth over the next ten years.

Household population growth projections can be used to estimate the future demand for new housing units. The Wisconsin Department of Administration (DOA) household growth projections, which were completed in 2013 using 2010 census data, provide an estimate for the projected increase in the number of households in Waterloo between the years 2020 to 2030. The DOA projected that households in Waterloo will increase by 106 from 2020-2030. The DOA's household population projection was accurate for Waterloo over the last ten years.

If the number of new housing units built from 2020-2030 mirrors the number of housing units built since 2010, Waterloo is on track to have a housing shortage of 57 units. This projection assumes the number of households will grow according to DOA projections, and that new housing construction and home vacancy rates remain relatively constant. As the number of households in Waterloo continues to increase, the current available housing supply will become further depleted as new construction rates fall short of keeping up with demand. Households unable to find adequate available housing in Waterloo may begin to expand their search beyond the municipality to find housing that meets their needs. This outlook indicates that home prices will continue to rise and the number of homes available for-sale on the market will continue to decrease. Buyers will have very little bargaining power which will further exacerbate the issues of supplying adequate housing, especially for Asset Limited, Income Constrained, Employed (ALICE) households.

Table 64: Waterloo: Housing Units and Households			
Housing Units	Household Estimate	Housing Units Built Since 2010	Vacant Housing Units
1,514	1,445	49	69

Source: ACS 5-year (2015-2019) estimate

Table 65: Waterloo: Projected Household Growth		
Housing Units Built Since 2010	DOA Projection for Household Growth 2020-2030	Projected Housing Shortage
49	106	**(57)**

Source: ACS 5-year (2015-2019) estimate, DOA

E. City of Watertown

Home Sale Price

Watertown City had a high rate of home price appreciation in the last year. Our estimate indicates a 31.4% increase in the median single-family home sale price from 2016 to 2020. Home values appreciated in Watertown at a slightly slower rate compared to Jefferson County as a whole.

Table 66:Watertown City: Median Close Price

Year	Median Home Price	Increase from Previous Year	Total % Appreciation Since 2016
2016	$137,000	-	-
2017	$140,250	2.4%	2.4%
2018	$145,000	3.4%	5.8%
2019	$160,000	10.3%	16.8%
2020 *	$180,000	12.5%	31.4%

**Data from January-October 2020*
***Source: Wisconsin Department of Revenue*

Table 67: Jefferson County: Median Close Price

Year	Median Home Price	Increase from Previous Year	Total % Appreciation Since 2016
2016	$170,000	-	-
2017	$175,500	3.2%	3.2%
2018	$195,000	11.1%	14.7%
2019	$214,200	9.8%	26.0%
2020*	$233,000	8.8%	37.1%

**Data from January-October 2020*
***Source: Wisconsin Department of Revenue*

Months' Inventory

The data also indicates homes in Watertown are selling quickly. Watertown has a month's supply of housing of 1.47. Six months of supply is considered the optimal months' supply in a balanced market. Watertown is below this threshold.

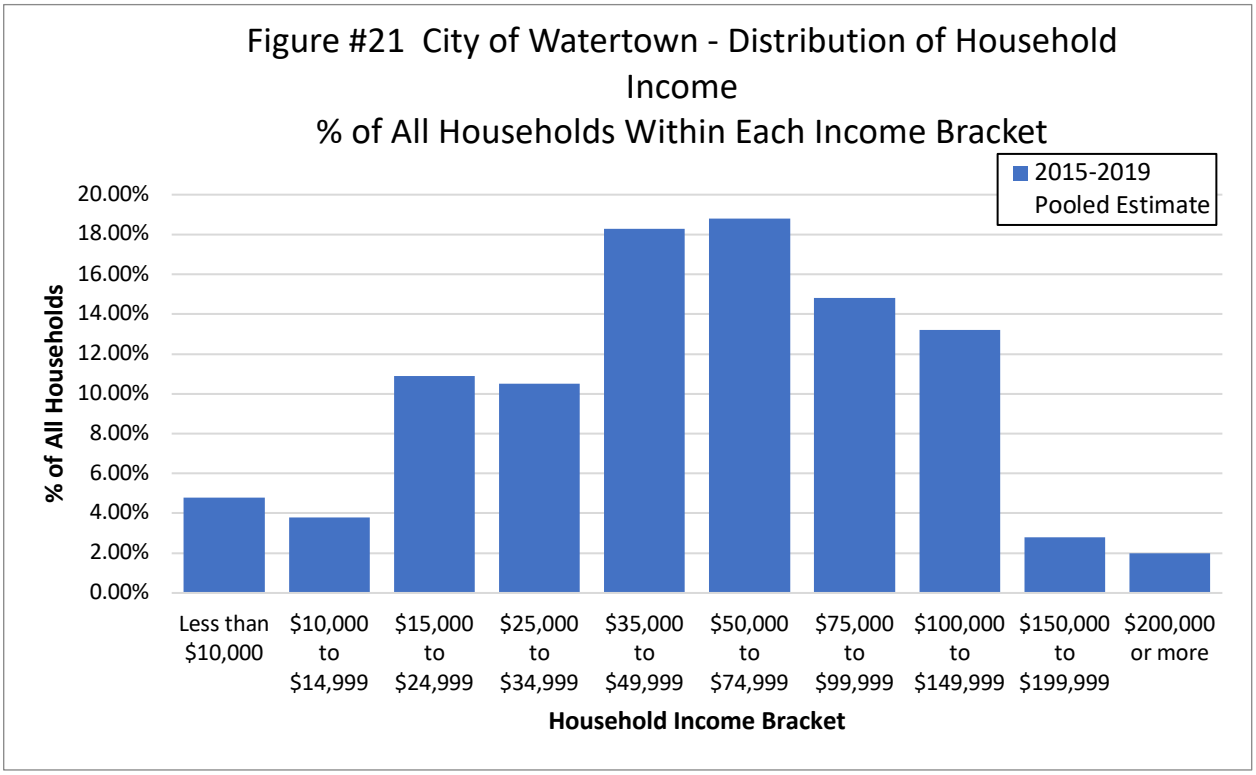
Table 68: City of Watertown Months' Inventory: Single-Family

	Homes Sold	Months	Average # of Homes Sold Per Month	Average # of Homes Available to be Sold	Month's Supply of Housing	Absorption Rate
2016	281	12	23.4	168	7.15	14.0%
2017	384	12	32.0	94	2.93	34.1%
2018	360	12	30.0	70	2.33	43.0%
2019	379	12	31.6	66	2.10	47.6%
2020 *	327	10	32.7	48	1.47	67.9%

**Data from January - October 2020*
***Source: Realtor.com and Wisconsin Department of Revenue*

Household Income

The distribution of household income for Watertown is shown below. Household income in an area has important implications for affordability of housing, both for renter households and homeowner households.

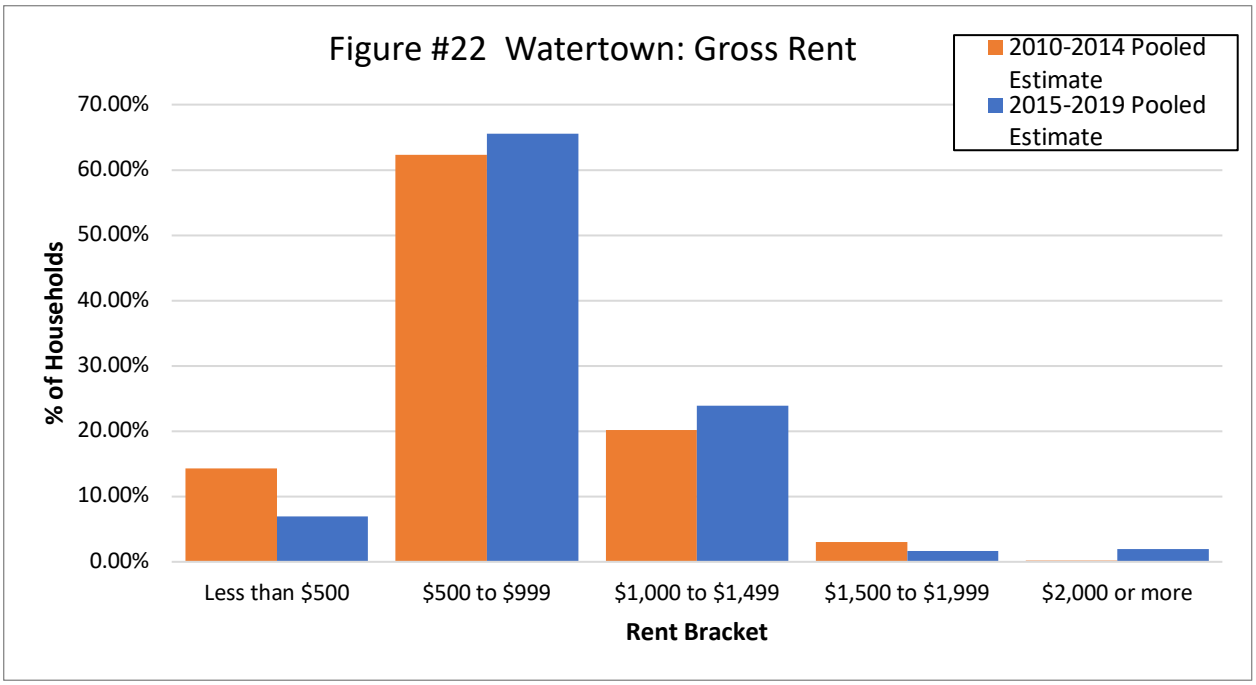


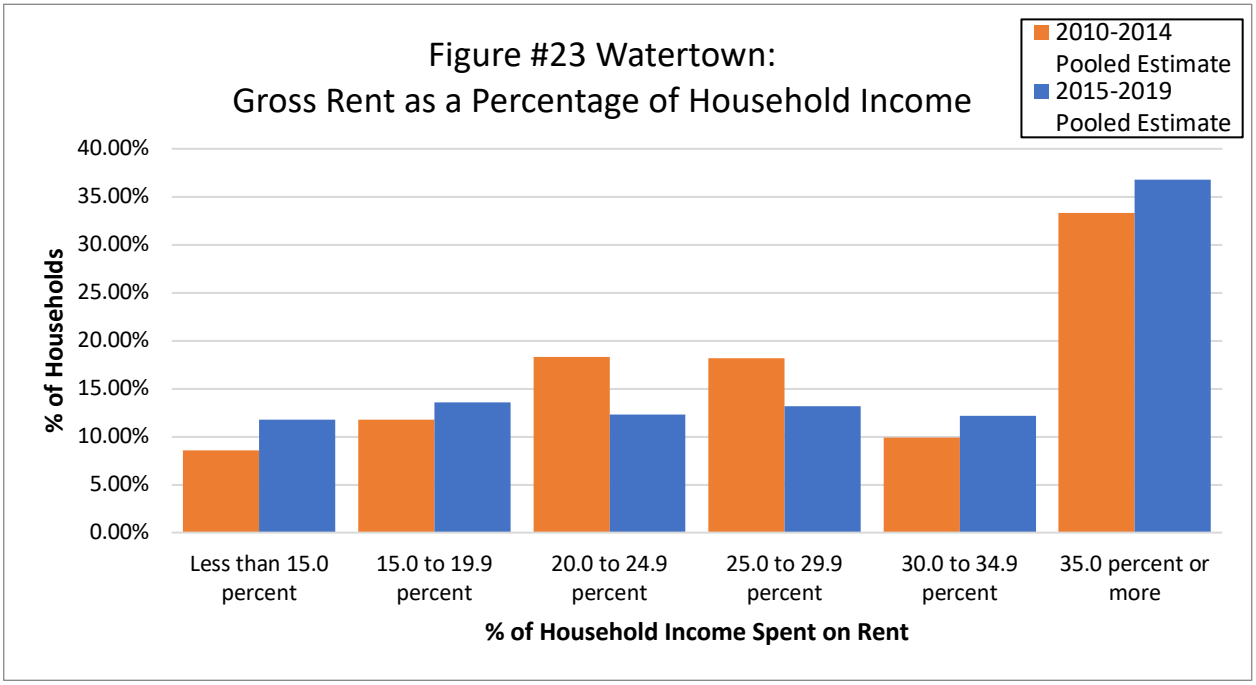
**Source: ACS 5-year estimates*

Gross Rent & Gross Rent as a Percentage of Household Income

The statistical tests showed that there is evidence that the distribution of gross rent shifted from the first half of the decade to the second half of the decade. In particular, there's evidence that the rent bracket of $500 in rent or less decreased as a proportion of all renters; the changes in other brackets were not statistically significant. Watertown was also the only municipality analyzed where the change in median gross rent was statistically significant; the estimated median gross rent increased from $800 to $860.

None of the individual brackets for Gross Rent as a Percentage of Income had a change that could be shown to be statistically significant; again, this is in part due to a limited sample size.





**Source: ACS 5-year estimates*

United For ALICE Households

Based on calculations from the American Community Survey and the ALICE Threshold in 2018, the Watertown had 3,403 households (36%) classified as ALICE and an additional 992 households (10%) fall below the Federal Poverty Level. The total number of households in 2018 below the ALICE Threshold in Watertown is 4,325 which makes up 46% of all households in the municipality. Compared to Jefferson County which had 31% of households below the ALICE Threshold, Watertown has a substantially higher concentration of ALICE households.

Table 69: ALICE Households in Watertown: 2018				
Total Households	Households Below the Poverty Line	ALICE Households	Total Households Below ALICE Threshold	% of Households Below ALICE Threshold
9,463	922	3,403	4,325	46%

**Source: United For ALICE 2018, US Census Bureau ACS 5-year estimates*

Projected Household and Housing Unit Growth

The projected growth of housing units in the City of Watertown was estimated in their Comprehensive Plan as prepared by Vanderwalle and Associates, which appears to have been prepared prior to 2010 and amended in 2017. As a result, the plan could not fully anticipate the challenges presented by the recession or by Covid-19, a condition consistent with many comprehensive plans. The plan projected that from 2010-2020, the number of new housing units built in Watertown would equal 949. According to the ACS, only 319 units have been built in Watertown since 2010. This drastically lower increase in new housing supply can be partially attributed to the housing crash in 2008 and recent suppressed household growth rates. The recent low rates of construction are not adequate to keep up with projected household growth over the next ten years.

Household population growth projections can be used to estimate the future demand for new housing units. The Wisconsin Department of Administration (DOA) household growth projections, which were completed in 2013 using 2010 census data, provide an estimate for the projected increase in the number of households in Watertown between the years 2020 to 2030. The DOA projected that households in Watertown will increase by 1,065 from 2020-2030. However, the DOA projections have overestimated household growth over recent years. If the DOA's projection is adjusted to reflect current household estimates, it indicates that households in Watertown will grow by 980 households between 2020 and 2030.

If the number of new housing units built from 2020-2030 mirrors the number of housing units built since 2010, Watertown is on track to have a housing shortage of 661 units. This projection assumes the number of households will grow according to DOA projections, and that new housing construction and home vacancy rates remain relatively constant. As the number of households in Watertown continues to increase, the current available housing supply will become further depleted as new construction rates fall short of keeping up with demand. Households unable to find adequate available housing in Watertown may begin to expand their search beyond the municipality to find housing that meets their needs. This outlook indicates that home prices will continue to rise and the number of homes available for-sale on the market will continue to decrease. Buyers will have very little bargaining power which will further exacerbate the issues of supplying adequate housing, especially for Asset Limited, Income Constrained, Employed (ALICE) households.

Table 70: Watertown: Housing Units and Households			
Housing Units	Household Estimate	Housing Units Built Since 2010	Vacant Housing Units
9,787	9,402	319	385

Source: ACS 5-year (2015-2019) estimate

Table 71: Watertown: Projected Household Growth		
Housing Units Built Since 2010	Adjusted DOA Projection for Household Growth 2020-2030	Projected Housing Shortage
319	980	(661)

Source: ACS 5-year (2015-2019) estimate, DOA

F. City of Whitewater

Home Prices

Whitewater had a low rate of home price appreciation in 2019. Our estimate indicates a 22.2% increase in the median single-family home sale price from 2016 to 2019. Home values appreciated in Whitewater at a slower rate than Jefferson County as a whole.

Table 72: Whitewater City: Median Home Price

Year	Median Home Price	Increase from Previous Year	Total % Appreciation Since 2016
2016	$146,050	-	-
2017	$155,178	6.2%	6.2%
2018	$177,513	14.4%	21.5%
2019	$178,538	0.6%	22.2%

**Source: Aggregate MLS data, accessed on (roughly) 6/11,2020*

Table 73: Jefferson County: Median Close Price

Year	Median Home Price	Increase from Previous Year	Total % Appreciation Since 2016
2016	$170,000	-	-
2017	$175,500	3.2%	3.2%
2018	$195,000	11.1%	14.7%
2019	$214,200	9.8%	26.0%

**Source: Wisconsin Department of Revenue*

Months' Supply of Housing

The data also indicates homes in Whitewater are selling quickly. Whitewater has a month's supply of housing of 1.79. Six months of supply is considered the optimal months' supply in a balanced market. Whitewater is below this threshold.

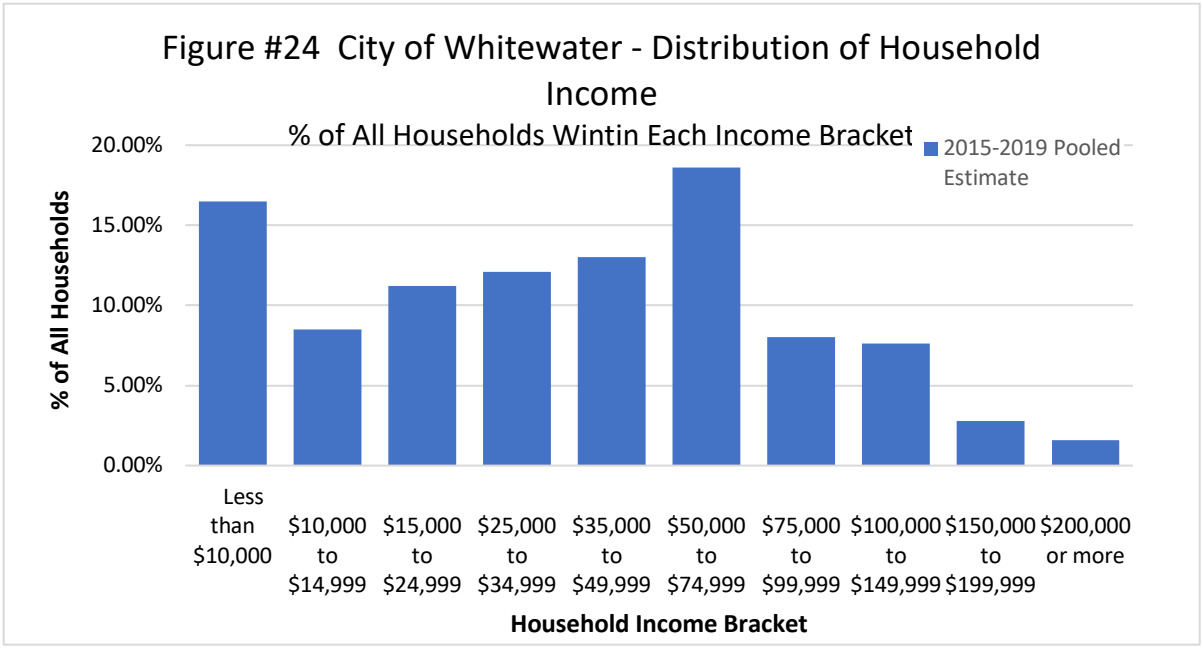
Table 74: City of Whitewater Months' Inventory: Single-Family

	Homes Sold	Months	Average # of Homes Sold Per Month	Number of Homes Available to be Sold	Month's Supply of Housing	Absorption Rate
06/2020	87	12	7.3	13	1.79	55.8%

**Source: Aggregate MLS data, accessed on (roughly) 6/11, 2020*

Household Income

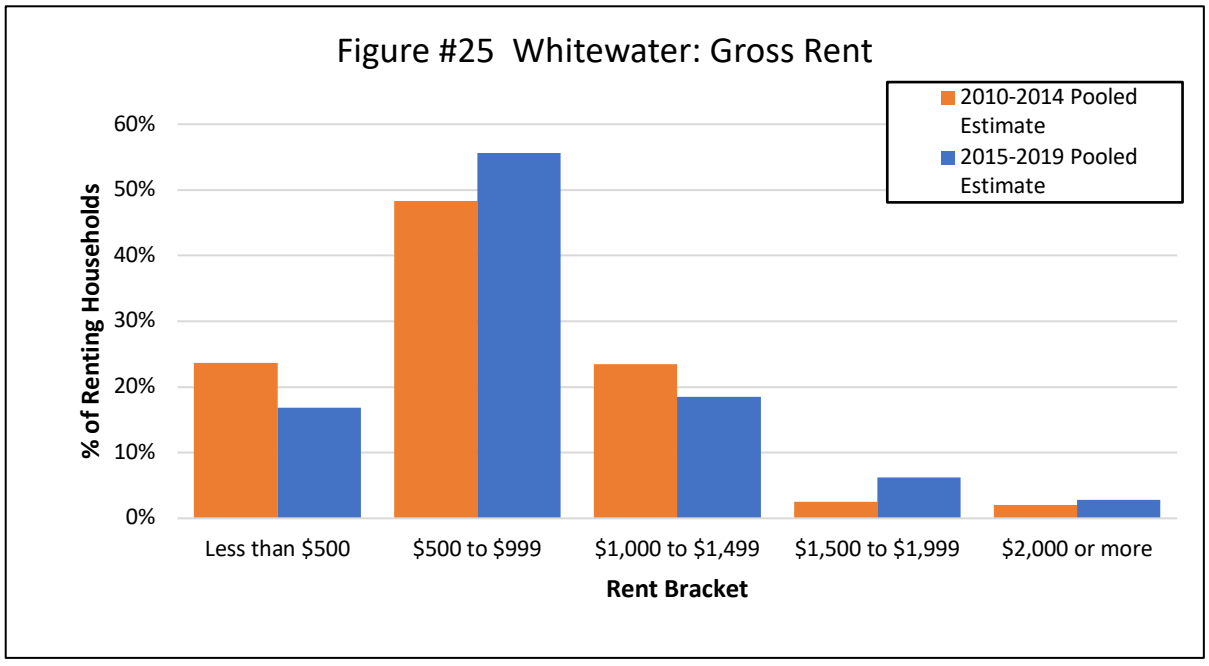
The distribution of household income for the City of Whitewater is shown below. Household income in an area has important implications for affordability of housing, both for renter households and homeowner households.



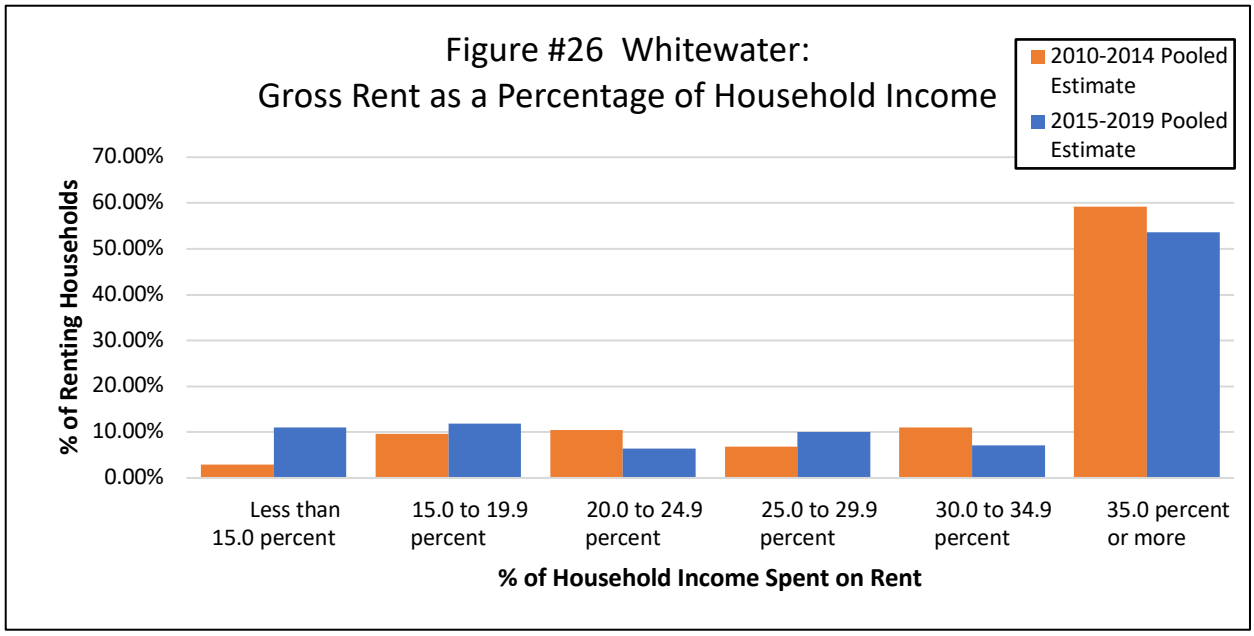
Source: ACS 5-year estimates

Gross Rent & Gross Rent as a Percentage of Household Income

Note that the data is not inflation adjusted.



Source: ACS 5-year estimates



Source: ACS 5-year estimates

United For ALICE Households

Based on calculations from the American Community Survey and the ALICE Threshold in 2018, the Whitewater had 818 households (18%) classified as ALICE and an additional 1,887 households (41%) fall below the Federal Poverty Level. The total number of households in 2018 below the ALICE Threshold in Whitewater is 2,705 which makes up 59% of all households in the municipality. Compared to Jefferson County which had 31% of households below the ALICE Threshold, Whitewater has a much higher distribution of ALICE households. This is most likely due to the fact that Whitewater is a college town.

Table 75: ALICE Households in Whitewater: 2018

Total Households	Households Below the Poverty Line	ALICE Households	Total Households Below ALICE Threshold	% of Households Below ALICE Threshold
4,616	1,887	818	2,705	59%

Source: United For ALICE 2018, US Census Bureau ACS 5-year estimates

Projected Household and Housing Unit Growth

The projected growth of housing units in the City of Whitewater was estimated in 2008 in their Comprehensive Plan as prepared by Vanderwalle and Associates. This plan was developed during the recession, just as the housing collapse occurred. As a result, this plan could not fully anticipate the challenges presented by the recession or by Covid-19, a condition consistent with many comprehensive plans. The plan projected that from 2014-2020 the number of new housing units built in Whitewater would equal 290. According to the ACS, only 242 units have been built in Whitewater since 2010. This lower increase in new housing supply can be partially attributed to the housing crash in 2008 and recent suppressed household growth rates. The

recent low rates of construction are not adequate to keep up with projected household growth over the next ten years.

Household population growth projections can be used to estimate the future demand for new housing units. The Wisconsin Department of Administration (DOA) household growth projections, which were completed in 2013 using 2010 census data, provide an estimate for the projected increase in the number of households in Whitewater between the years 2020 to 2030. The DOA projected that households in Whitewater will increase by 966 from 2020-2030. However, the DOA projections have overestimated household growth over recent years. If the DOA's projection is adjusted to reflect current household estimates, it indicates that households in Whitewater will grow by 782 households between 2020 and 2030.

If the number of new housing units built from 2020-2030 mirrors the number of housing units built since 2010, Whitewater is on track to have a housing shortage of 540 units. This projection assumes the number of households will grow according to DOA projections, and that new housing construction and home vacancy rates remain relatively constant. As the number of households in Whitewater continues to increase, the current available housing supply will become further depleted as new construction rates fall short of keeping up with demand. Households unable to find adequate available housing in Whitewater may begin to expand their search beyond the municipality to find housing that meets their needs. This outlook indicates that home prices will continue to rise and the number of homes available for-sale on the market will continue to decrease. Buyers will have very little bargaining power which will further exacerbate the issues of supplying adequate housing, especially for Asset Limited, Income Constrained, Employed (ALICE) households.

Table 76: Whitewater: Housing Units and Households

Housing Units	Household Estimate	Housing Units Built Since 2010	Vacant Housing Units
5,297	4,686	242	611

**Source: ACS 5-year (2015-2019) estimate*

Table 77: Whitewater: Projected Household Growth

Housing Units Built Since 2010	Adjusted DOA Projection for Household Growth 2020-2030	Projected Housing Shortage
242	782	**(540)**

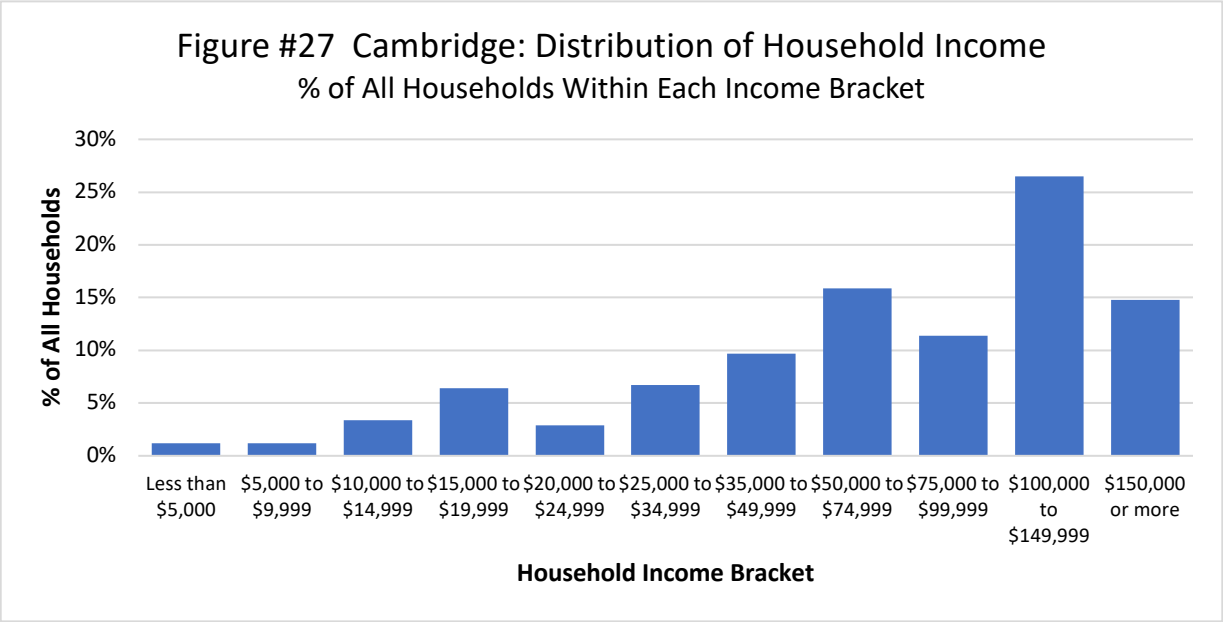
**Source: ACS 5-year (2015-2019) estimate, DOA*

G. Village of Cambridge

Cambridge is a Village in Jefferson County that has an estimated population of about 1,332 people. It has an estimated 632 total housing units, with 596 of them being occupied. Of those 596, 491 of them are estimated to be owner-occupied and 105 are renter-occupied. The Village of Cambridge mostly consists of homeowners.

Household Income

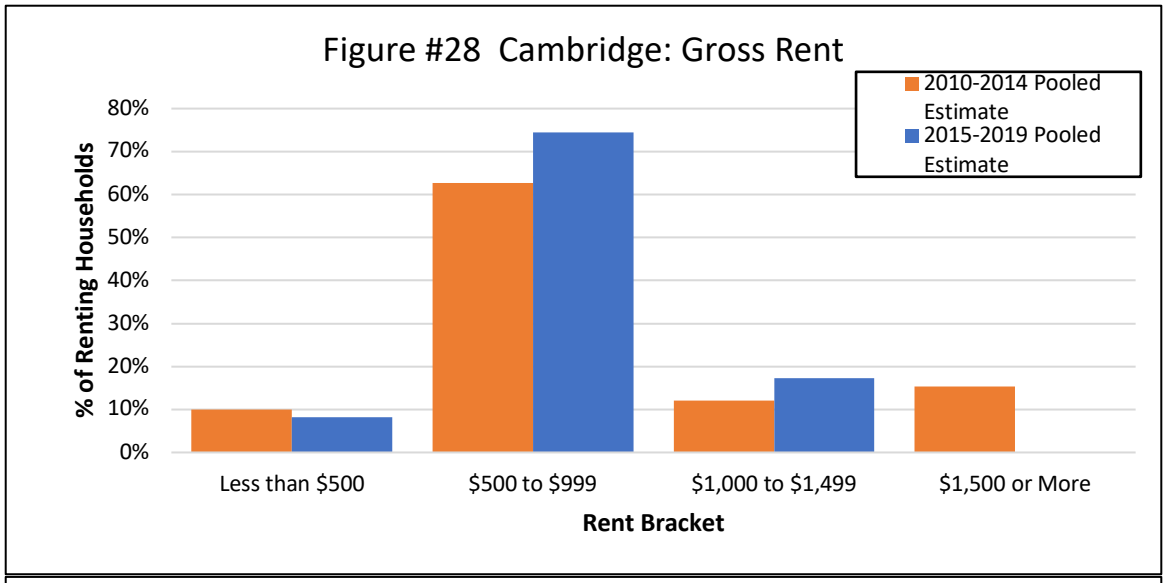
The distribution of household income in Cambridge is shown below. Household income in an area has important implications for affordability of housing, both for renter households and homeowner households. Relative to other communities in Jefferson County, households in the upper brackets of household income. This is reflected by a higher median household income in Cambridge of $79,821. House values are also higher in Cambridge and it is near Dane County and Madison, which provides some opportunity for building development.

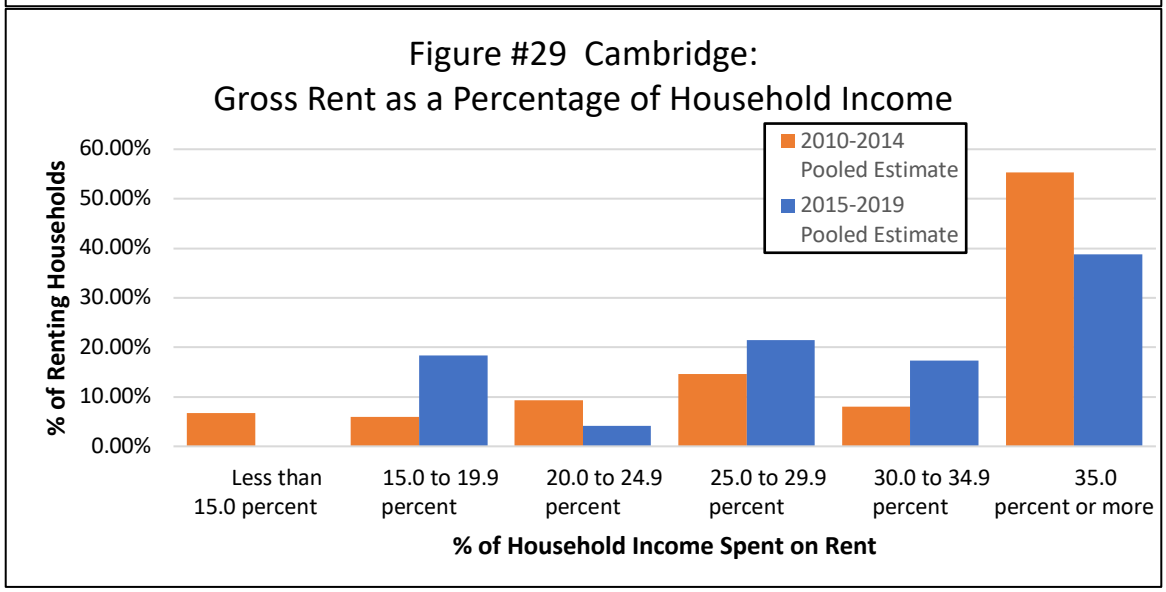


Source: ACS 5-year estimates

Gross Rent & Gross Rent as a Percentage of Household Income

Cambridge's median household income is one of the highest in Jefferson. Housing prices have more than kept pace with the higher income. In addition, both houses/apartments in Cambridge are more expensive to rent and people are willing to pay the premium. Cambridge has no households paying less than 15% of their income on housing. Cambridge also has more households in the 3 highest spending brackets for percentage of income spent on rent. In addition, in 2014, some renters were paying more than $1,500 for their monthly costs. Though none are estimated to pay that in 2019, this could be a result of sampling error. It seems as though this may be the case since median rent actually rose between 2014 and 2019 from $833 to $886. We see fewer renters spending less than $500 in Cambridge, and a higher share in the next 2 brackets, with the numbers likely leaning towards the upper limit of the bracket in each.





Source: ACS 5-year estimates

United For ALICE Households

Based on calculations from the American Community Survey and the ALICE Threshold in 2018, Cambridge had 158 households (27%) classified as ALICE and an additional 29 households (5%) fall below the Federal Poverty Level. The total number of households in 2018 The number of households in 2018 below the ALICE Threshold in Cambridge is 187 which makes up 32% of all households in the municipality. Compared to Jefferson County which had 31% of households below the ALICE Threshold, Cambridge has a comparable distribution of ALICE households.

Table 78: ALICE Households in Cambridge: 2018

Total Households	Households Below the Poverty Line	ALICE Households	Total Households Below ALICE Threshold	% of Households Below ALICE Threshold
593	29	158	187	32%

**Source: United For ALICE 2018, US Census Bureau ACS 5-year estimates*

Projected Household and Housing Unit Growth

Housing unit growth has been stagnant over the last ten years which is not surprising, considering Cambridge's size. According to the ACS, only 15 units have been built in Cambridge since 2010. This drastically low increase in new housing supply can be partially attributed to the housing crash in 2008 and recent suppressed household growth rates. The recent low rates of construction are not adequate to keep up with projected household growth over the next ten years.

Household population growth projections can be used to estimate the future demand for new housing units. The Wisconsin Department of Administration (DOA) household growth projections, which were completed in 2013 using 2010 census data, provide an estimate for the projected increase in the number of households in Cambridge between the years 2020 to 2030. The DOA projected that households in Cambridge will increase by 90 from 2020-2030. However, the DOA projections have overestimated household growth over recent years. If the DOA's projection is adjusted to reflect current household estimates, it indicates that households in Cambridge will grow by 78 households between 2020 and 2030.

If the number of new housing units built from 2020-2030 mirrors the number of housing units built since 2010, Cambridge is on track to have a housing shortage of 63 units. This projection assumes the number of households will grow according to DOA projections, and that new housing construction and home vacancy rates remain relatively constant. As the number of households in Cambridge continues to increase, the current available housing supply will become further depleted as new construction rates fall short of keeping up with demand. Households unable to find adequate available housing in Cambridge may begin to expand their search beyond the municipality to find housing that meets their needs. This outlook indicates that home prices will continue to rise and the number of homes available for-sale on the market will continue to decrease. Buyers will have very little bargaining power which will further exacerbate the issues of supplying adequate housing, especially for Asset Limited, Income Constrained, Employed (ALICE) households.

Table 79: Cambridge: Housing Units and Households

Housing Units	Household Estimate	Housing Units Built Since 2010	Vacant Housing Units
632	596	15	36

**Source: ACS 5-year (2015-2019) estimate*

Table 80: Cambridge: Projected Household Growth

Housing Units Built Since 2010	Adjusted DOA Projection for Household Growth 2020-2030	Projected Housing Shortage
15	78	**(63)**

**Source: ACS 5-year (2015-2019) estimate, DOA*

H. Village of Johnson Creek

Home Sale Price

Johnson Creek had a high rate of home price appreciation in the last year. Our estimate indicates a 37.3% increase in the median single-family home sale price from 2016 to 2020. Home values appreciated in Johnson Creek at a similar rate compared to Jefferson County as a whole.

Table 81: Johnson Creek: Median Close Price

Year	Median Home Price	Increase from Previous Year	Total % Appreciation Since 2016
2016	$214,750	-	-
2017	$233,000	8.5%	8.5%
2018	$240,000	3.0%	11.8%
2019	$272,500	13.5%	26.9%
2020*	$294,950	8.2%	37.3%

**Data from January-October 2020*
***Source: Wisconsin Department of Revenue*

Table 82: Jefferson County: Median Close Price

Year	Median Home Price	Increase from Previous Year	Total % Appreciation Since 2016
2016	$170,000	-	-
2017	$175,500	3.2%	3.2%
2018	$195,000	11.1%	14.7%
2019	$214,200	9.8%	26.0%
2020*	$233,000	8.8%	37.1%

**Data from January-October 2020*
***Source: Wisconsin Department of Revenue*

Months' Inventory

The data also indicates homes in Johnson Creek are selling quickly. Johnson Creek has a month's supply of housing of 2.81. Six months of supply is considered the optimal months' supply in a balanced market. Johnson Creek is below this threshold.

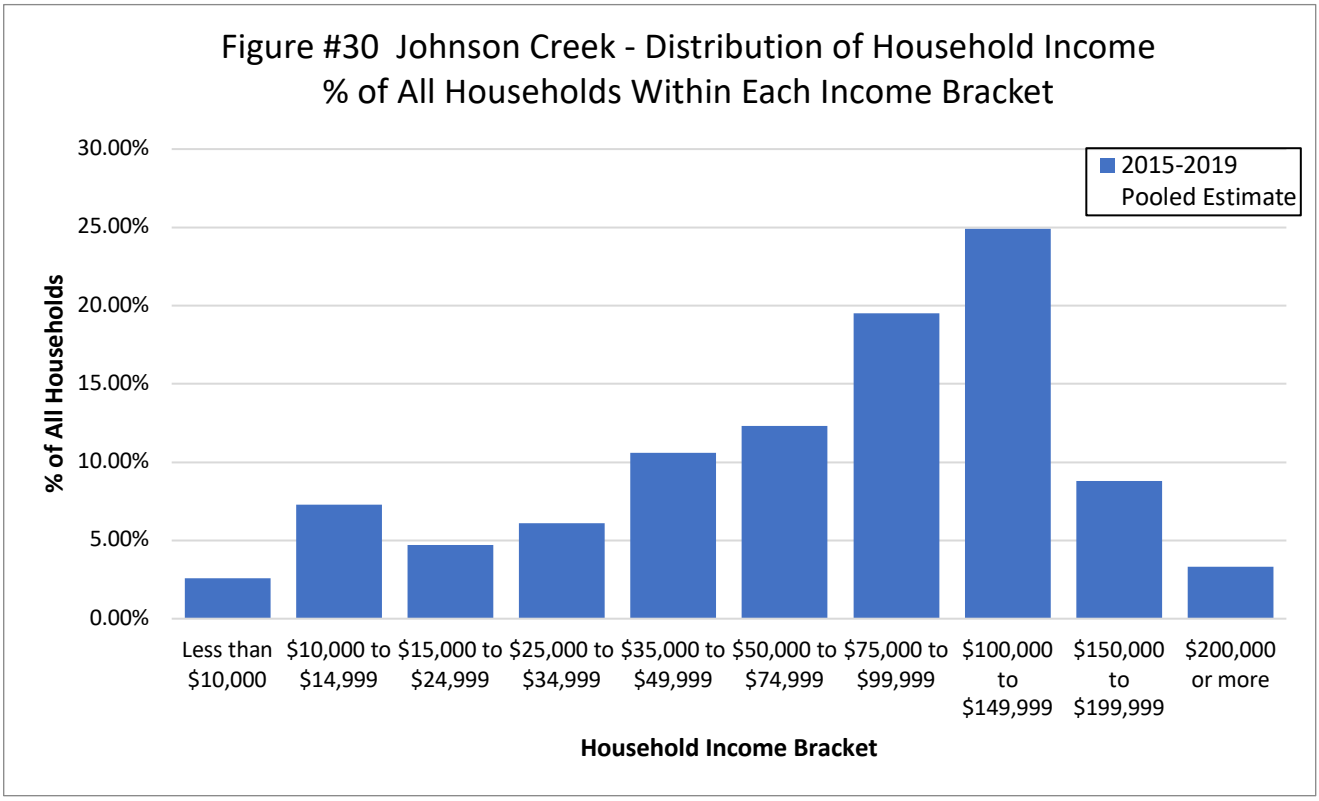
Table 83: Johnson Creek Months' Inventory: Single-Family

	Homes Sold	Months	Average # of Homes Sold Per Month	Average # of Homes Available to be Sold	Month's Supply of Housing	Absorption Rate
2016	52	12	4.3	25	5.81	17.2%
2017	68	12	5.7	18	3.10	32.2%
2018	67	12	5.6	21	3.67	27.2%
2019	64	12	5.3	15	2.81	35.6%
2020*	50	10	5.0	NA	NA	NA

**Data from January - October 2020*
***Source: Realtor.com and Wisconsin Department of Revenue*

Household Income

The distribution of household income for Johnson Creek is shown below (Figure #28). Household income in an area has important implications for affordability of housing, both for renter households and homeowner households.

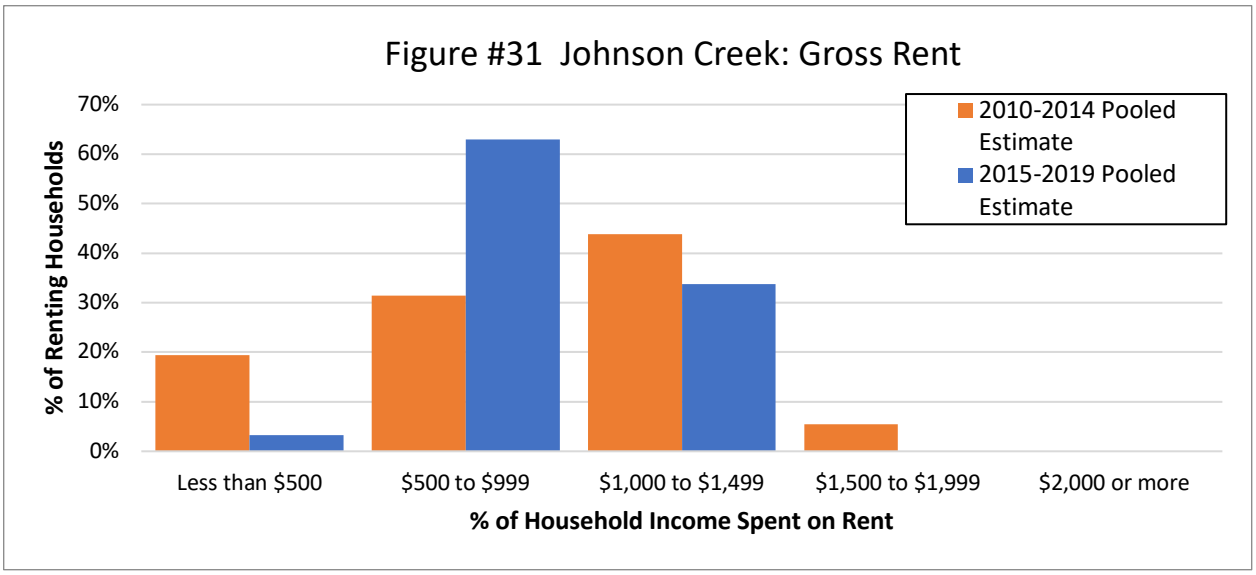


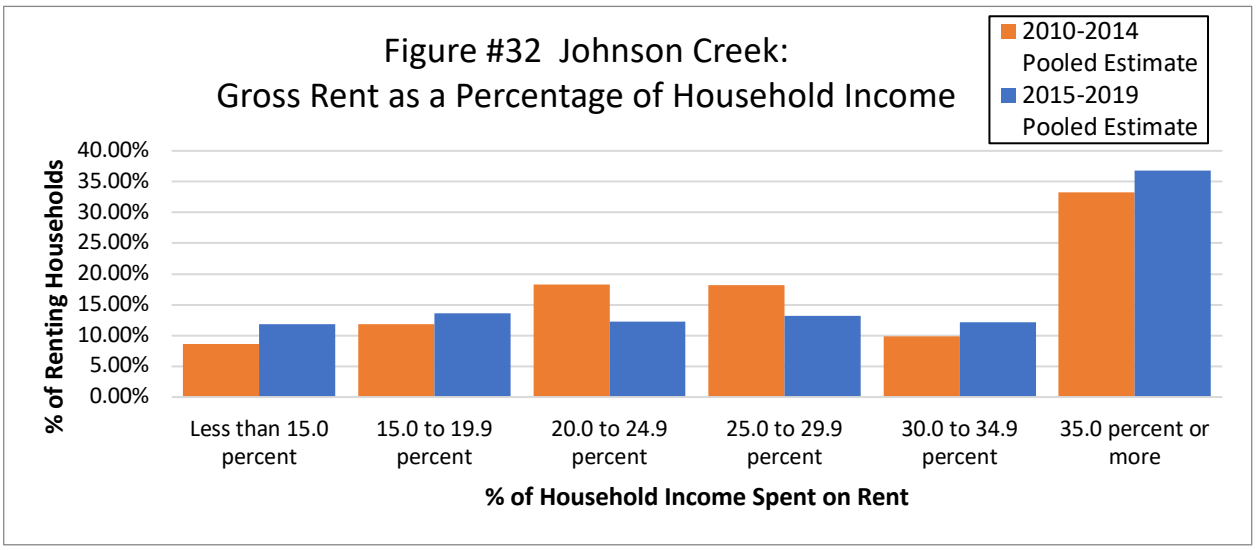
Source: ACS 5-year estimates

Gross Rent & Gross Rent as a Percentage of Household Income

There is evidence that the distribution of gross rent shifted from the first half of the decade to the second half of the decade. As can be seen in the graph below, a larger proportion of renters paid $500-$999 in the late 2010's than in the early 2010's. Note that the data is not inflation adjusted.

Gross rent as a percentage of household income also changed. Counterintuitively, despite Gross Rent decreasing across Johnson Creek, there's evidence that more renter households paid a larger percentage of their income in the latter half of the 2010's than renter households in the first half of the 2010's. Part of this can be attributed to the small amount of renter households within Johnson Creek as a whole: there were only an estimated 258 renter households in Johnson Creek in the latter half of the 2010's. Only a relatively small number of additional renter households need to immigrate (or migrate) from Johnson Creek in order to change the distribution of affordability.





Source: ACS 5-year estimates

United For ALICE Households

Based on calculations from the American Community Survey and the ALICE Threshold in 2018, the Johnson Creek had 254 households (23%) classified as ALICE and an additional 69 households (6%) fall below the Federal Poverty Level. The total number of households in 2018 below the ALICE Threshold in Johnson Creek is 323 which makes up 29% of all households in the municipality. Compared to Jefferson County which had 31% of households below the ALICE Threshold, Johnson Creek has a very similar distribution of ALICE households.

Table 84: ALICE Households in Johnson Creek: 2018

Total Households	Households Below the Poverty Line	ALICE Households	Total Households Below ALICE Threshold	% of Households Below ALICE Threshold
1,109	69	254	323	29%

**Source: United For ALICE 2018, US Census Bureau ACS 5-year estimates*

Projected Household and Housing Unit Growth

The projected growth of housing units in the Village of Johnson Creek was estimated in their Comprehensive Plan as prepared by Vanderwalle and Associates. The projected growth of housing units in Johnson Creek was estimated in the 2017 plan for the municipality. The plan projected that from 2015-2020 the number of new housing units built in Johnson Creek would equal 227. According to the ACS, only 59 units have been built in Johnson Creek since 2010. This drastically lower increase in new housing supply can be partially attributed to the housing crash in 2008 and recent suppressed household growth rates. The recent low rates of construction are not adequate to keep up with projected household growth over the next ten years.

Household population growth projections can be used to estimate the future demand for new housing units. The Wisconsin Department of Administration (DOA) household growth projections, which were completed in 2013 using 2010 census data, provide an estimate for the projected increase in the number of households in Johnson Creek between the years 2020 to 2030. The DOA projected that households in Johnson Creek will increase by 295 from 2020-2030. However, the DOA projections have overestimated household growth over recent years. If the DOA's projection is adjusted to reflect current household estimates, it indicates that households in Johnson Creek will grow by 248 households between 2020 and 2030. If the number of new housing units built from 2020-2030 mirrors the number of housing units built since 2010, Johnson Creek is on track to have a housing shortage of 189 units. This projection assumes the number of households will grow according to DOA projections, and that new housing construction and home vacancy rates remain relatively constant. As the number of households in Johnson Creek continues to increase, the current available housing supply will become further depleted as new construction rates fall short of keeping up with demand. Households unable to find adequate available housing in Johnson Creek may begin to expand their search beyond the municipality to find housing that meets their needs. This outlook indicates that home prices will continue to rise and the number of homes available for-sale on the market will continue to decrease. Buyers will have very little bargaining power which will further exacerbate the issues of supplying adequate housing, especially for Asset Limited, Income Constrained, Employed (ALICE) households.

Table 85: Johnson Creek: Housing Units and Households

Housing Units	Household Estimate	Housing Units Built Since 2010	Vacant Housing Units
1,175	1,107	59	68

Source: ACS 5-year (2015-2019) estimate

Table 86: Johnson Creek: Projected Household Growth

Housing Units Built Since 2010	Adjusted DOA Projection for Household Growth 2020-2030	Projected Housing Shortage
59	248	**(189)**

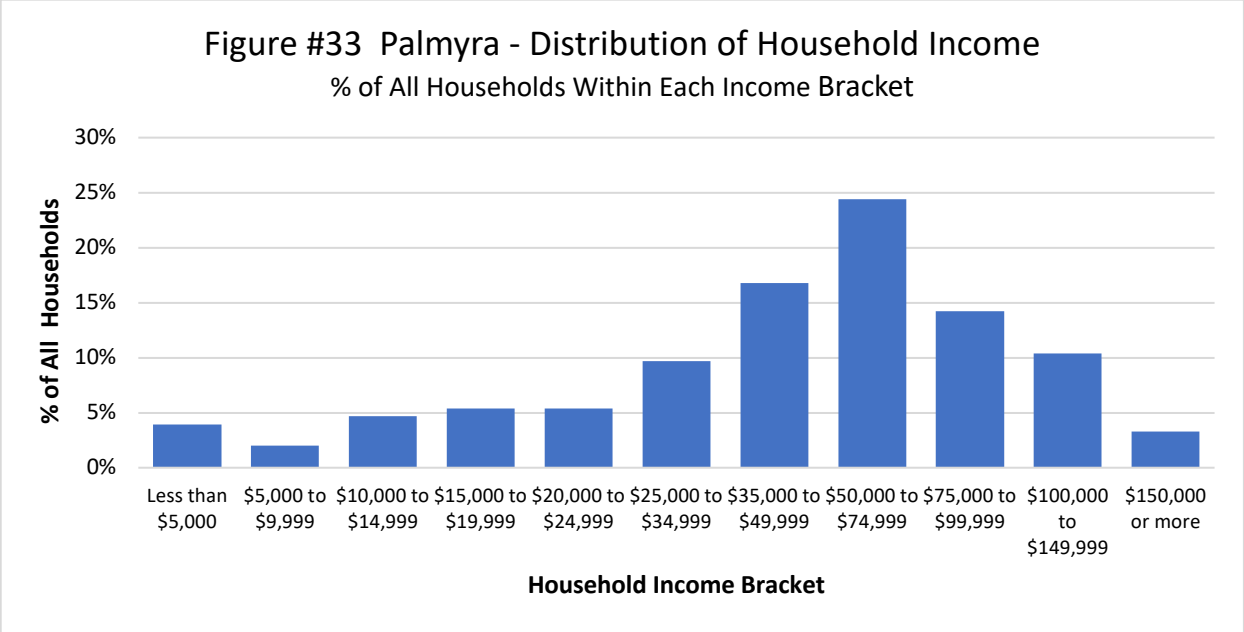
**Source: ACS 5-year (2015-2019) estimate, DOA*

I. Village of Palmyra

Palmyra is a small village with a population of about 1,700 and an estimated 840 housing units. Of those 840, an estimated 763 are occupied, with 493 of them being owner-occupied and 270 of them being renter-occupied. Households average about 2 people per unit. In general, Palmyra is small and does not have many renters or house owners compared to other municipalities in the state or even in Jefferson County. It is unlikely for any surges in housing demand specifically in the village of Palmyra. Its Comprehensive Plan offers little residential expansion beyond annexation.

Household Income

The distribution of household income for the Village is shown below. Household income in an area has important implications for affordability of housing, both for renter households and homeowner households. We can see that the majority of household income falls between the range of $35,000 to $100,000 in Palmyra, making it lower on the income scale than other communities in Jefferson County. Median household income is reported at $52,426, much lower than the median household income level for the county.



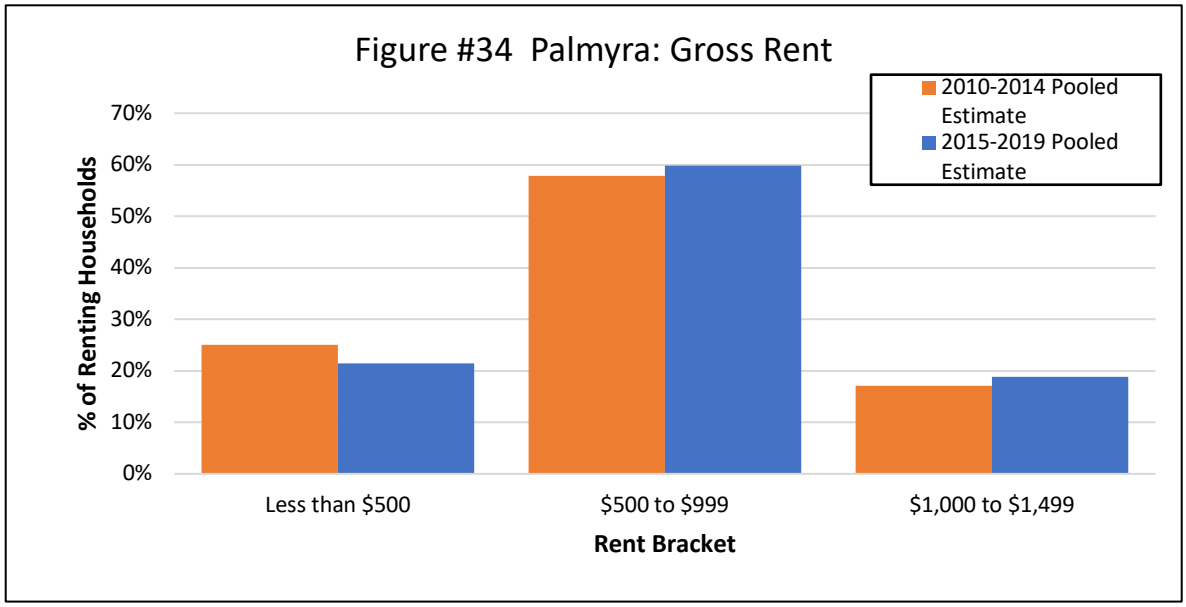
Source: ACS 5-year estimates

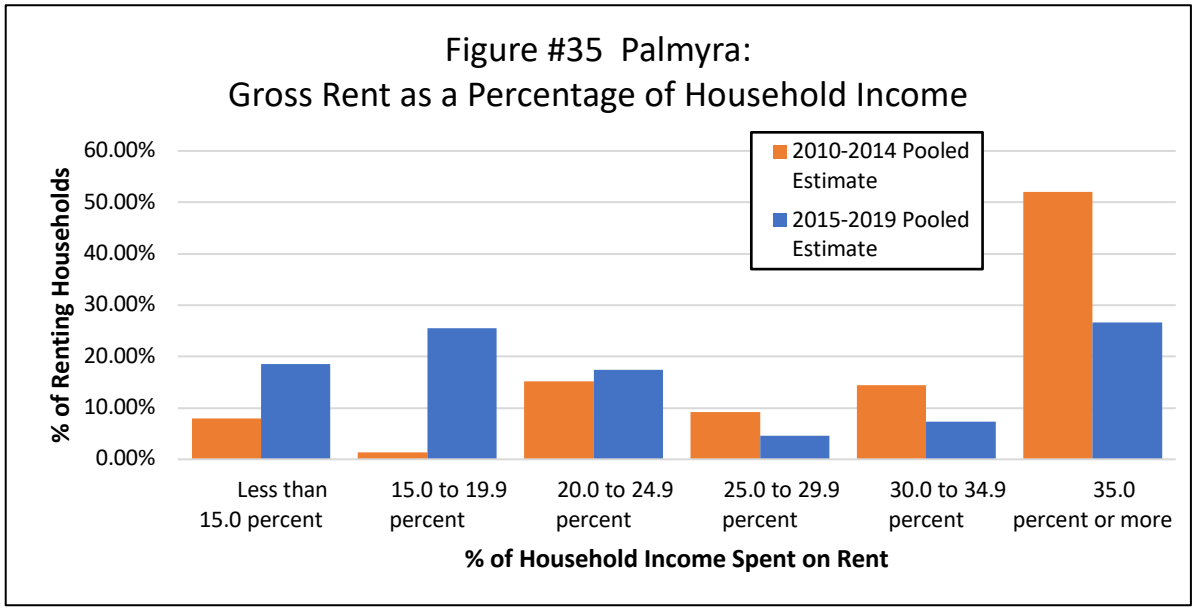
Gross Rent & Gross Rent as a Percentage of Household Income

From the statistics we can see changes in the percentage of household income spent on rent from 2014 to 2019. While the percentage of income spent on rent changes, we see that gross rent hardly changed at all over the 5-year period. We could attempt to deduce that renters saw their household income rise from 2014 to 2019, but this could also be a sampling error from the census considering the extremely small size of the village. From the gross rent, we saw no cases of a rental charge being more than $1,500 a month and more than half of the listed rent charges between $500 and $900, indicating the low cost of living associated with Palmyra.

Median rent stayed at an estimated $716 between 2014 and 2019. With such a low number of renters, low median household income, and high variance in the percentage of income spent on

rent in the data, it is hard to say anything with much certainty regarding the rental market. It is likely the rental market will remain as is for the foreseeable future and does not have any unmet demand due simply to population numbers. We can also see that any rental units would have to charge a low price to attract any renters due to the competing levels of rent in the area.





Source: ACS 5-year estimates

United For ALICE Households

Based on calculations from the American Community Survey and the ALICE Threshold in 2018, Fort Atkinson had 222 households (31%) classified as ALICE and an additional 68 households (10%) fall below the Federal Poverty Level. The total number of households in 2018 below the ALICE Threshold in Palmyra is 290 which makes up 41% of all households in the municipality. Compared to Jefferson County which had 31% of households below the ALICE Threshold, Palmyra has a higher distribution of ALICE households.

ALICE Households in Palmyra: 2018				
Total Households	Households Below the Poverty Line	ALICE Households	Total Households Below ALICE Threshold	% of Households Below ALICE Threshold
706	68	222	290	41%

Source: United For ALICE 2018, US Census Bureau ACS 5-year estimates

Projected Household and Housing Unit Growth

Housing unit growth has been stagnant over the last ten years which is not surprising considering Palmyra's size. According to the ACS, only 3 units have been built in Palmyra since 2010. This drastically low increase in new housing supply can be partially attributed to the housing crash in 2008 and recent suppressed household growth rates. The recent low rates of construction are not adequate to keep up with projected household growth over the next ten years.

Household population growth projections can be used to estimate the future demand for new housing units. The Wisconsin Department of Administration (DOA) household growth projections, which were completed in 2013 using 2010 census data, provide an estimate for the projected increase in the number of households in Palmyra between the years 2020 to 2030. The DOA projected that households in Palmyra will increase by 48 from 2020-2030. The DOA's household growth projection for Palmyra has been accurate over the last ten years.

If the number of new housing units built from 2020-2030 mirrors the number of housing units built since 2010, Palmyra is on track to have a housing shortage of 45 units. This projection assumes the number of households will grow according to DOA projections, and that new housing construction and home vacancy rates remain relatively constant. As the number of households in Palmyra continues to increase, the current available housing supply will become further depleted as new construction rates fall short of keeping up with demand. Households unable to find adequate available housing in Palmyra may begin to expand their search beyond the municipality to find housing that meets their needs. This outlook indicates that home prices will continue to rise and the number of homes available for-sale on the market will continue to decrease. Buyers will have very little bargaining power which will further exacerbate the issues of supplying adequate housing, especially for Asset Limited, Income Constrained, Employed (ALICE) households.

Palmyra: Housing Units and Households			
Housing Units	Household Estimate	Housing Units Built Since 2010	Vacant Housing Units
840	763	3	77

Source: ACS 5-year (2015-2019) estimate

Palmyra: Projected Household Growth		
Housing Units Built Since 2010	DOA Projection for Household Growth 2020-2030	Projected Housing Shortage
3	48	**(45)**

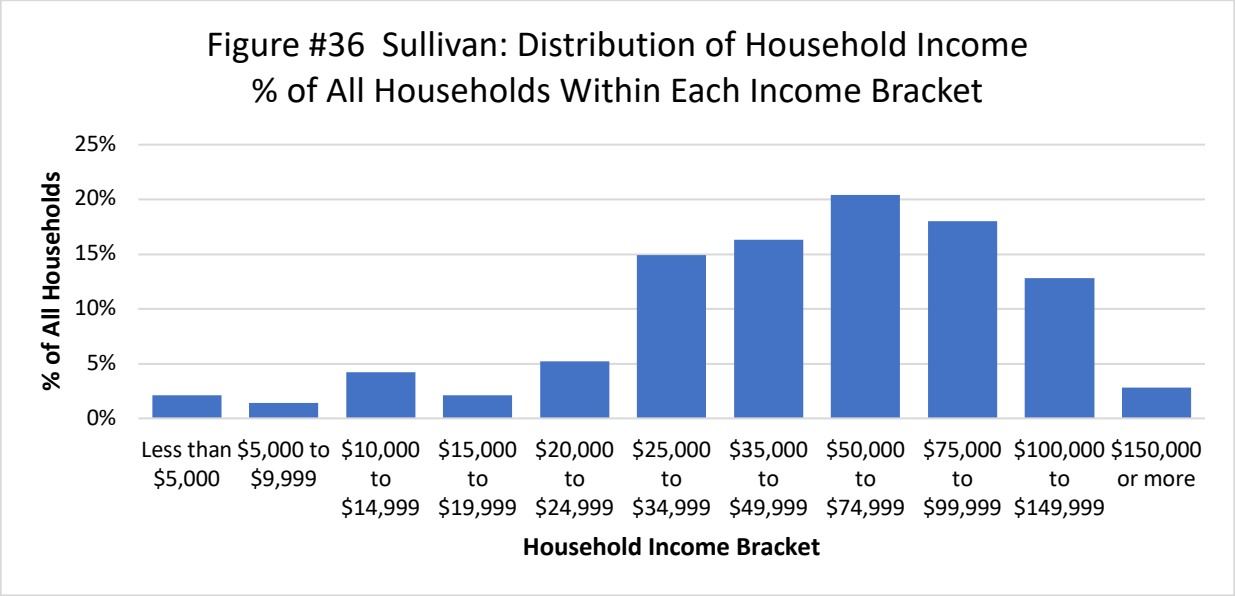
Source: ACS 5-year (2015-2019) estimate, DOA

J. Village of Sullivan

Sullivan, Wisconsin is the smallest municipality reviewed in the report at an estimated population of 711 people. There are only 295 estimated housing units in Village of Sullivan, and 289 of them are estimated to be occupied. Of the 289 occupied, 118 are owner-occupied and 171 are renter-occupied. Sullivan appears to be much more renter-oriented than the other municipalities studied, with over 50% of its occupants renting their lodgings. The homeowner section of the town appears to be more family oriented as well, with an average of almost 3 people within a given household that is owner-occupied. With such a small population, it is unlikely that any large development projects or even medium-sized development is needed as there does not appear to be any immediate housing demand.

Household Income

The distribution of household income in the village is shown below. Household income in an area has important implications for affordability of housing, both for renter households and homeowner households. Sullivan's distribution follows a relatively similar trend as Palmyra's, and both have similar levels of median household income. Median household income in the Village of Sullivan is $59,375, reflecting a very small community composed of less affluent citizens and offering less expensive homes. We can see the distribution is heavily weighted around the $25,000 to $100,000 household income level. Overall income levels indicate low prospects for large or upscale developments.

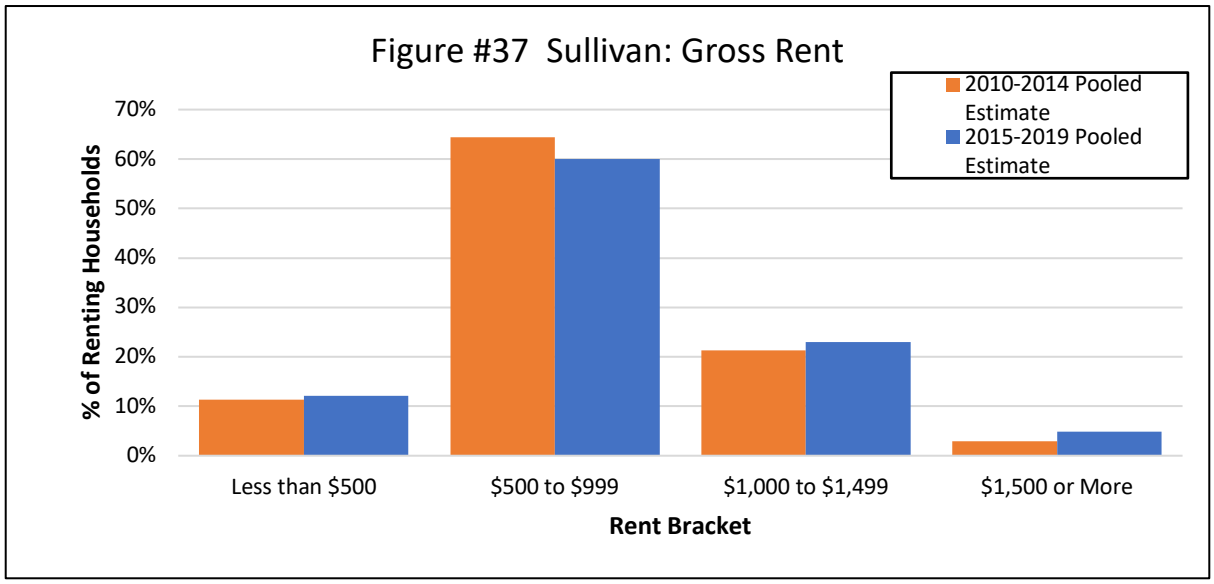


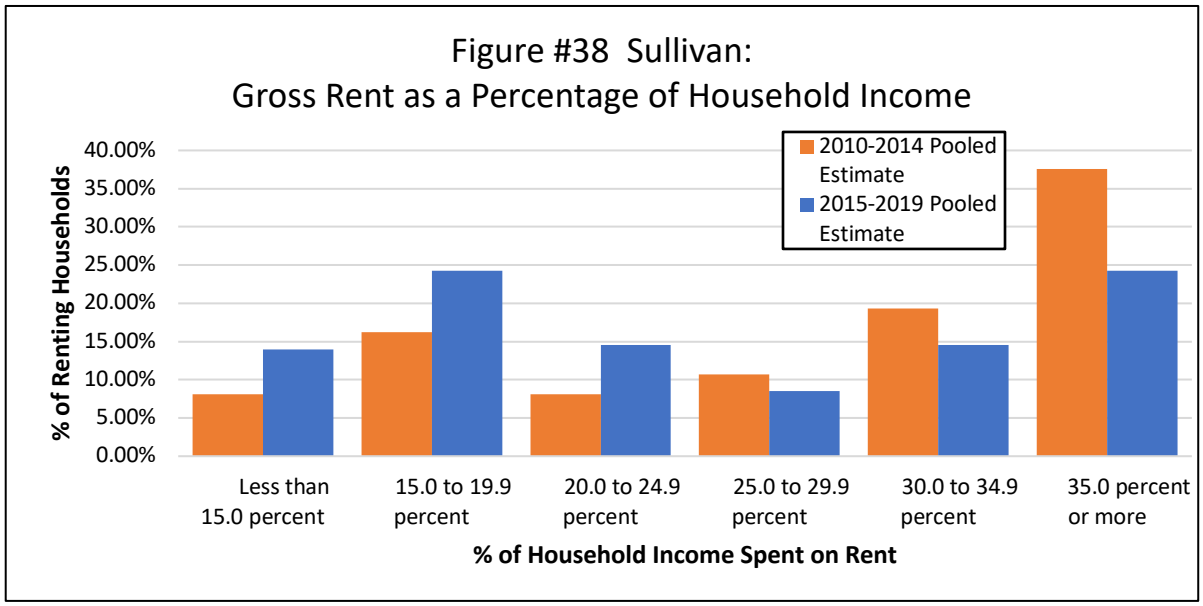
Source: ACS 5-year estimates

Gross Rent & Gross Rent as a Percentage of Household Income

The Village of Sullivan presents an interesting image of renters and their payments. Despite being a relatively low median income community, Sullivan has a very high percentage of renters paying $1,000 or more every month compared to Palmyra, a village with similar income demographics. We also see a much higher median rent in Sullivan than in Palmyra: $857 in Sullivan compared to $716 in Palmyra, a $141 difference despite a $7,000 difference in median household income levels. By way of comparison, median rent in Sullivan is only $29 lower than

in Cambridge, even though there is a difference of about $20,000 in median household income levels. The change in median rent in Sullivan from 2014 to 2019 is negligible, indicating that this occurrence is not new. Surprisingly, the number of people paying more than 30% for their housing costs is not actually that much higher than Palmyra, and it is still a lower number than Cambridge. It seems that even though more people are spending more on rent, they may be more properly allocating their income in Sullivan. Nevertheless, it seems that Sullivan would have opportunities to create more affordable rental properties, however given the population limitations, this may be a small-scale development. Keep in mind that such a small village will be even more influenced by any potential sampling error in the census estimations.





Source: ACS 5-year estimates

United For ALICE Households

Based on calculations from the American Community Survey and the ALICE Threshold in 2018, the Sullivan had 93 households (32%) classified as ALICE and an additional 25 households (9%) fall below the Federal Poverty Level. The total number of households in 2018 below the ALICE Threshold in Sullivan is 118 which makes up 41% of all households in the municipality. Compared to Jefferson County which had 31% of households below the ALICE Threshold, Johnson Creek has a higher distribution of ALICE households.

ALICE Households in Sullivan: 2018				
Total Households	Households Below the Poverty Line	ALICE Households	Total Households Below ALICE Threshold	% of Households Below ALICE Threshold
289	25	93	118	41%

**Source: United For ALICE 2018, US Census Bureau ACS 5-year estimates*

Projected Household and Housing Unit Growth

Housing unit growth has been stagnant over the last ten years which is not surprising considering Sullivan's size. According to the ACS, only 3 units have been built in Sullivan since 2010. This drastically low increase in new housing supply can be partially attributed to the housing crash in 2008 and recent suppressed household growth rates. The recent low rates of construction are not adequate to keep up with projected household growth over the next ten years.

Household population growth projections can be used to estimate the future demand for new housing units. The Wisconsin Department of Administration (DOA) household growth projections, which were completed in 2013 using 2010 census data, provide an estimate for the projected increase in the number of households in Sullivan between the years 2020 to 2030. The DOA projected that households in Sullivan will increase by 24. from 2020-2030. However, the DOA projections have overestimated household growth over recent years. If the DOA's projection is adjusted to reflect current household estimates, it indicates that households in Sullivan will grow by 21 households between 2020 and 2030.

If the number of new housing units built from 2020-2030 mirrors the number of housing units built since 2010, Sullivan is on track to have a housing shortage of 16 units. This projection assumes the number of households will grow according to DOA projections, and that new housing construction and home vacancy rates remain relatively constant. As the number of households in Sullivan continues to increase, the current available housing supply will become further depleted as new construction rates fall short of keeping up with demand. Households unable to find adequate available housing in Sullivan may begin to expand their search beyond the municipality to find housing that meets their needs. This outlook indicates that home prices will continue to rise and the number of homes available for-sale on the market will continue to decrease. Buyers will have very little bargaining power which will further exacerbate the issues of supplying adequate housing, especially for Asset Limited, Income Constrained, Employed (ALICE) households.

Sullivan: Housing Units and Households			
Housing Units	Household Estimate	Housing Units Built Since 2010	Vacant Housing Units
295	289	5	6

Source: ACS 5-year (2015-2019) estimate

Sullivan: Projected Household Growth		
Housing Units Built Since 2010	Adjusted DOA Projection for Household Growth 2020-2030	Projected Housing Shortage
5	21	(16)

Source: ACS 5-year (2015-2019) estimate, DOA

Conclusion and Findings

The results for the entire Jefferson housing market show signs of a shortage. Policy changes that address this disequilibrium may improve the health of the housing market and prevent the current housing shortage from compounding. Of particular note, our results do suggest a significant shortage of housing that is affordable to income constrained households. While housing shortages may benefit the community in the short run, resulting in rising asset values for those invested in the community, it may also result in stagnation as economic development is constrained. Firms and employers seek a local labor pool—without access they may look to communities with a larger and more layered pool of available workers.

Appendix

The Location Quotient

In an attempt to provide context regarding the employment mix within the "Jefferson County" region, we use the Location Quotient method. Note that the region is defined as those counties Jefferson County's residents travel to for work or employers seek to import workers (Given their dominance, we include Dane, Dodge, Jefferson, Walworth and Waukesha). Other counties, such as Rock and Milwaukee, do not materially change the results, but are omitted due to their small impact size. The true Location Quotient approach recognizes that each industry produces partly for export and partly for local consumption. Consider a shoe manufacturer that produces 100 shoes in a market (county) where the residents only demand 50. The result is that the manufacturer exports the extra 50 shoes. A truly accurate Location Quotient requires an accurate description of the local consumption function. However, this cannot be obtained.

As a result, a proxy is used in which we look at the national employment in an industry and the local employment in that industry. In a competitive marketplace, firms exist to fulfill demand. Since the Location Quotient (LQ) is a stylized calculation, we make several assumptions. First, we assume that we are not participating in international trade. Second, we assume that the demand for an employee's output is uniform. Third, we use national employment as an estimator of the necessary employment to fill that demand; any employment beyond that level is anticipated to serve the export market.

$$L_2 = \frac{\text{County's Manufacturing Employment}}{\text{County's Total Employment}} \Big/ \frac{\text{Region's Manufacturing Employment}}{\text{Region's Total Employment}}$$

The denominator (the share of national employment in manufacturing production) provides a measure of how much local production is needed to satisfy the local demand for manufactured goods. For example, if 15 percent of national employment is in manufacturing production, the city is assumed to need 15 percent of its workforce to satisfy its local manufacturing demand. If the city actually employs 36 percent of its workers in manufacturing production, 15% of the workers are assumed to produce for local consumption and 21% are assumed to produce for export. In this example, the LQ would be 36%/21%. As a result, a location quotient over one implies that the city or the region exports manufactured goods. It also tells us that the region is more reliant on manufacturing than the nation as a whole.

The location quotient provides an interesting perspective into the employment mix in the counties in the "Jefferson County" region. It tells us which industries we rely on and which provide us with export-based jobs. The first section of the analysis looks at basic industrial groupings. The second section looks at the specific industries within these groupings.

One of the more interesting phenomena presented in the LQ calculations is Jefferson County's dominance in manufacturing. Jefferson County has an LQ of 1.98. This is notable since it is also the largest employment group in the county. Manufacturing wages within Jefferson County are competitive and resemble the State of Wisconsin at 99% of the average wage in the industry within the State. This industry, along with Natural Resources (predominantly agriculture), are the two industries that greatly exceed the region's average. Underrepresented industries are relatively highly compensated. Two such industries are Information and Financial Services, with LQ's of 0.44 and 0.43. These are also two of the highest paid industries with annual wages in excess of $71,000. The wages offered in these industries (Information and Financial Services) within Jefferson County are only 61% of the State of Wisconsin average. In the area of Trade, Transportation, and Utilities (which has an LQ of 1.09) we see an average wage that is 83% of the State average.

The impact of these employment and wage differentials is that residents in the areas that are underrepresented in the County must travel outside the county to earn wages that approach the State average for the industry. In addition, the overreliance on Manufacturing and Agriculture lead to an economic imbalance. Outside of Manufacturing, Jefferson County has a downward sloping reliance on lower paid jobs (those with higher LQ's) such that the higher paid jobs are underrepresented. This, in concert with the high cost of housing, leads to the exodus of high skilled labor and the import of lower paid workers.

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